THE

SOUTHERN AGRICULTURIST.

JULY, 1831.

PART I.

ORIGINAL CORRESPONDENCE.

ART. I.—*On the Variety of Cotton, proper to be Cultivated on the Sea-Islands; by* WHITEMARSH B. SEABROOK.

"Edisto Island, May 9, 1831.

Dear Sir,—I have read your "Appeal" with feelings of regret and mortification. That in a community intelligent and strictly agricultural, you should be obliged so frequently to entreat its members to aid you in furthering *their own interests*, is, indeed, surprising. I am aware of the strong repugnance of the planter to appear before the public as a writer. But, Sir, we want not well-turned periods or rhetorical embellishment—a plain tale told in a plain way is, on this point alone, the object of our solicitude. We read to be instructed by the matter and not to be amused by the manner of a communication. Agricultural critics should be scrupulously avoided. With but few exceptions their knowledge of husbandry is exceedingly limited and confused. In discountenancing the practice of commenting on the performances of each other, let us remember that rhetoric can neither feed nor clothe us. Independent of the general reasons why the pen is so seldom resorted to by the planter on the immediate subject of his vocation, there is an obvious one at this time which is peculiarly applicable to the Southern States. The thoughts of our yeomanry are engrossed by a much higher and more

exciting topic than the raising of corn or cotton. It is not how to increase but how to preserve the products of their industry. They are not now called on to guard against a moral or physical pestilence, but to watch the movements of a political demon which threatens by one fell swoop to end life, liberty and property. Although surrounded by the blessings of a munificent Providence, and inhabiting one of the choicest spots of the habitable globe, yet, we are annually becoming poorer by the operation of unjust and tyrannical laws.* Until the oppressed in their wisdom shall determine what course the crisis demands of us to

* It is the received opinion, that the depreciation of Cotton is to be ascribed to over production. This is untrue as the following statistical facts will clearly show:

General import of Cotton into Great-Britain for the last four years.

1827,	894,106	1,644,516	
1828,	750,410		
1829,	746,226	1,618,134	
1830,	871,908		
Decrease,			26,382 bags.
Consumption for 1827,	712,906	1.445,546	
1828,	732,640		
1829,	753,416	1,558,684	
1830,	805,268		
Increase,			113,138 bags.

Thus, whilst the imports for 1829 and 1830 were together less by 26,382 bags than the imports of 1827 and 1828, the consumption for the former years exceeded the latter by 56,567 bags. The following statement of the stock of Cotton in the British market at the close of the last four years, exhibits a diminished demand for *white* Sea Islands, but an increased consumption for stained and most other qualities of Cotton.

	1827 and 1828	1829 and 1830.
Sea-Islands,	12,170	17,970
Stained,	3,760	2,650
Upland,	250,900	162,860
Alabama,	96,560	56,700
New-Orleans,	59,340	46,500
Egyptian,	72,640	34,050
Surat and Bengal,	152,820	109,150
Pernambuco,	93,600	76,990
Bahia and Macio,	39,700	34,000
Cumana,	13,690	7,450
Bourbon,	1,670	1,210

The diminution of consumption of Sea Islands has arisen not from excess of production, but from the more general use of silk, and the well-known fact, that other Cottons have been substituted for it. This and the increased demand for stained and upland or bowed, certainly do not augur well for any description of *white* long Cotton.

pursue, it is meet that we wear the badges of our ignominy. Labour we must, though we share with strangers its profits and its blessings. Under these peculiar and highly embarrassing circumstances, the interesting interrogatory presents itself, what shall be done? Ought the cotton planter to persevere in his profession? I am decidedly of that opinion. Our rice-lands are not only limited in extent, but every acre that is valuable may be said to be in tilth. Any material increase of that commodity too, would soon reduce the price below the cost of production. Of indigo but little is needed. Sugar can never be a profitable crop. The lands only of the middle districts are adapted to the successful cultivation of the grape. The cotton planter, therefore, must either continue to reap the earnings of a crippled industry—convert his property into bonds or stock—and thus by abandoning his pursuit, impoverish, if not ruin his State; or, he must direct his labour to the raising of some other article about which he perhaps knows nothing, or to which his soil is not adapted.

Should the planters of the lower districts persist in growing Cotton, it may be inquired, what description would be most profitable? The common, the fine, or the superfine. Of superfine Cotton so small a quantity is wanted, that a few planters could supply the world. It is believed that Messrs. Burden and Wilson do now raise enough to meet the demands of the British and French manufacturers. With the first named, the Cottons of Egypt and a part of South-America are rapidly coming into competition, and may soon constitute a successful rival. Should the tariff of protection exist much longer, English buyers for this quality will not be found in our markets. It is known that for some time past the best black-seed has been annually shipped from Charleston to India. As was to have been anticipated the staple has so improved that the difference between it and that of our common Sea-Islands, is essentially diminished.

When we reflect that the cotton plant is indigenous to the East*—that it was cultivated there and manufactured

* Linnæus considered the Cotton plant to have been carried originally from the Western to the Eastern continent; an opinion which Dr. Percival, in a paper published in the Manchester Society's Transactions, seems to have most successfully controverted. He considers it as indigenous to Persia.—*Statistics of Liverpool;*

into "fine linen" before the discovery of America*—that from the low rate of wages the wool can be imported into Europe at a small expense—that the supply even now from that quarter is great and increasing†—that the soil and climate of Hindostan are well suited to its culture; and finally, that it is the interest of Great-Britain to establish new outlets for her manufactures, it cannot be doubted, that the mutually profitable intercourse which has so long promoted the prosperity of the Southern planter and English manufacturer must soon cease, never again to be revived. If the main channel of British commerce be turned from the United States to the East, India will be converted from a manufacturing‡ into an agricultural dependency, whilst an extensive market would thus be opened for her fabrics, the increasing supply from this part of her colonial possessions would soon render her independent of foreign powers for raw Cotton. In such a contingency too supplies of corn adequate to the wants of the mother-country would be furnished in a few years; for the non-adaptation of cotton lands for rice would make the raising of some other grain indespensable. These considerations, superadded to others to which I shall now advert, induce me to think, that on the sea-islands and a strip of the main-land parallel thereto, the fine Cotton should be raised. 1st. Because, it is not grown in any part of the world, except in this State and Georgia. 2d. Whatever causes may tend to reduce the value of our staple article, still relatively it will bear a higher price than the common; for in proportion to its cheapness will be its increased consumption. Moreover, its superior strength and durability in a manufactured form will cause its substitution in those fabrics where coarser Cottons are now from necessity used. 3d. Fine

* Previously to the discovery of the Cape of Good Hope, the cotton manufactures of the East formed a very important branch of the commerce of the Italian States with Europe.—*Statistics of Liverpool.*

† From 1826 to 1829, inclusive, the imports of Cotton into Great Britain from India, were 313,312 bags.—*Ibid.*

‡ Cotton manufactures were introduced into Hindostan when the country was subdued by the Mogul Tartars, but did not attain any considerable perfection until towards the close of the fourteenth century; after which, they made rapid improvement, and are now (1825) estimated to employ, directly and indirectly, nearly nine-tenths of the immense population of that country.

The population under British jurisdiction or influence is estimated at 86,000,000.—*Ibid.*

Cotton is worked up into goods which are consumed as well by the nobility of Europe, as by the middle rank of society in most nations. Notwithstanding its value at this time may be materially impaired by a change in the fashions, or the death of some important personage, yet its extended culture, by measurably diminishing the price, will create a demand for it by that class not affected by adventitious circumstances or the folly of the world. 4th. Should the duty of $\frac{5}{8}d.$ per lb. be imposed by the British parliament on foreign Cottons, although it will operate as a tax on the finer as well as coarser qualities, yet, it is questionable, whether the cultivator of the former will suffer by the imposition. The burden, by falling so much heavier on common Cottons, will divert capital to the finer descriptions. For these the foreign manufacturer has hitherto been indebted solely to a few planters of the Southern States: he will now have an inducement to add to his annual stock. If the diversion of capital alluded to do not take place, how will the surplus fund heretofore expended in this country for common Cottons be employed? Unquestionably in increasing the importations of those very qualitities from other countries. In either event, the value of boweds or uplands and common sea-islands will proportionally depreciate: that of fine Cotton will be enhanced on the first supposition: it will not be impaired if the latter be found to be true.

The following is likely to be the the operation of the duty, viz:—

	d.				*per cent.*
$\frac{5}{8}d.$ duty on Cotton worth *in Liverpool*,	$5\frac{3}{4}$	equal to 8 cents *in Charleston*,		is	$11\frac{2}{3}$
	$6\frac{1}{4}$	" 9	-		10
	$12\frac{1}{2}$	" 19	-		5
	16	" 25	-		$3\frac{9}{10}$
	2*s.*	" 40	-		$2\frac{1}{2}$

It will thus be seen, that sea-islands will pay less than at present, whilst upon uplands, Orleans, &c. &c. the duty will be nearly doubled.

5th. For the last four years the average price of cotton wool in England was as follows:—

1	Sea-Island, - - - -	15*d.*
2	Bourbon, - - - -	$8\frac{3}{4}$
	Egyptian, - - - -	$7\frac{3}{4}$
	Demerara, - - - -	$7\frac{1}{2}$

2	Pernambuco,	7½*d.*
	Maranham,	7¼
	Bahia,	7
3	Para,	6¾
	New-Orleans,	6¾
	Uplands,	6½
	Alabama,	6¼
	Minas,	6¼
	Barbados,	6¼
	Common West-India, Cumana,	6¼
4	Madras,	4¾
	Carthagena,	4¾
	Smyrna,	4¾
	Surat,	4½
	Bengal,*	3¾

From this statement it will be perceived, that the value of nearly all the Cottons grown for exportation may be divided into four classes; and that those from Bourbon, Egypt, Demerara, Pernambuco, Maranham and Bahia are next in rank to Sea-Islands. It is a disputed point whether the seed we now use originally came from Pernambuco or the Bahamas.† This alone is conclusive evidence, that at least a part of the West-Indies or of South-America is well adapted to the production of the finer descriptions of our favourite staple. Bad husbandry, inattention to the selection of seed, but more especially the degeneracy of the plant which is not annually renewed, will readily account for the difference in quality between our Cottons and theirs. The samples I have seen from Bourbon are deficient only in length of staple.‡ No art can make uplands equal to sea-

* From a Glasgow price current of December, 1830, Bengal Cotton *from Bourbon seed is quoted at* 9½*d.* The same also shews, that the value of Cottons from other quarters is gradually approaching that of sea-islands. Whilst the latter are set down at from 12½ to 17*d*, the Cottons from Pernambuco, Egypt, Demerara, Berbice and Porto Rico are represented as commanding readily from 8¼ to 10*d*. Liverpool public sale lists inform us, that Cotton from New South Wales and Barbadoes, called "Vine Barbados," had repeatedly brought as high prices as any that were sold at the same time.

† Mr. Couper in the Agriculturist for this month (May) says, "what we call here silk Cotton has been represented to me by Bahama planters as the Anguilla."

‡ When Sea-Island Cotton was first imported from the United States into Liverpool, the staple was objected to, as too long, and it is said, that, by one or two spinners, it was literally cut shorter before it was used,—*Statistics of Liverpool.*

islands, because the species* is distinct. On the contrary, the seed from the Cottons of our destined competetors, it is asserted, is of precisely the same class as that which is cultivated on the sea-board of this State. South-America, extending through more than fifty degrees of latitude, affords ample scope for profitable speculation. The advantages which that country presents to the commercial enterprise of England are incalculable, and that she will use every effort to profit by them, needs no sagacity to predict. The import of Cotton into Great-Britain from South-America from 1827 to 1830, inclusive, was 966,485 bags.

On the admission that the view I have thus far taken of the subject is correct, still one great difficulty presents itself. It is believed, that fine Cotton is comparatively unproductive. On this point I am unprepared to give a decided opinion. That it is more difficult to prepare for market, and that it yields more seed than other descriptions, I experimentally know, but I am not satisfied, that the nett product per acre is less. Whether the difference in price between it and common sea-islands be more than the value of the additional labour bestowed in ginning the former, a short time will disclose. No calculations should be based exclusively on the present market value of either. Circumstances have levelled all distinction in brands. What these circumstances are and whether they will continue, I should be unwilling to hazard a conjecture at this time.

The settlement of this interesting question suggests reflections as to the mode best calculated to ensure the greatest crop of fine Cotton. I do not propose to speak of manures, or of any untried method of cultivation, but to advert briefly to what has never been a subject of discussion with many of our agricultural Societies in the lower country. I allude to the more general use of the plough. In

* There are several species of Cotton, *(gossypium,)* Class monodelphia. Order polyandria; as

Gossypium Herbaceum,	Gossypium Hirsutum,
Indicum,	Religiosum,
Micranthum,	Latifolium,
Arboreum,	Barbadense,
Vitifolium,	Peruvianum, &c.;

Some of which are annual, others perennial. Hamilton in his Statistical and Historical Description of Hindostan, mentions, that some species are indigenous to the Eastern, and others to the Western world.

the middle and Northern sections of the State from six to ten acres of Cotton to each labourer are readily raised. Although the impracticability of gathering the crop precludes the idea of attempting to grow so large a quantity of sea-islands, yet, the question arises, whether the time usually employed in preparing 3½ or 4 acres to the hand may not be profitably diminished. Whilst ploughs are effecting the purpose for which the hoe is now laboriously used, could not a force be diverted to the collecting of manure, the more effectual draining of the land, the construction of durable fences, or some other work for the better performance of which the want of time is so convenient now-a-days to plead. For every plough in operation the services of at least two or three slaves may be dispensed with in the field at some stages of the preparation of the land for seed. This would be as positive a gain to the planter as though he had received the aid of extra-labourers without incurring the expense of supporting them. The scheme adverted to, however, would call for an additional supply of fodder and perhaps grain. One plough on most plantations could easily furnish both, and the incidental comforts attending the supply would more than compensate for the pain of innovating on a long established usage. Prejudice or ignorance here suggests, that for Cotton, the plough should be limited to clayey or aluminous lands: that for sandy soils, its application, by increasing the friability of the earth, would be injurious. Cotton is planted on high beds or ridges. Beneath the sward which forms the listing the land is necessarily as hard as nature made it: that part of it the plough never reaches, and is, therefore, a fit receptacle for the tap-root of Cotton, if it be true, that a firm and unbroken soil is requisite for its healthful action. The objection, therefore, must be against the pulverization of the spaces between the rows. Of earth from these spaces the bed is made. If the hoe constitute the instrument of its formation, the earth is thrown up in somewhat of a lumpy state, which, however, disappears after the first or second working. Should the plough perform that service, the grouud will be made more loose and open. Which plan then theoretically is the better, for practically we have no experience. It is an undisputed point that the atmosphere is the matrix of manures.

In general, therefore, the more porous the soil is made, the more certain it will be of inhaling atmospherical manure. The tap-root seems to have been provided by nature mainly to attach the plant to the surface. The lateral shoots and fibres are the feeders. Strew manure in the alley of a cotton-bed and myriads of small thread-like substances, issuing from the tap-root, will soon encompass and penetrate it. It is manifest, therefore, the less obstruction art presents to the free passage of the lateral shoots through the earth, the more the plant itself will be benefited. If from a very free use of the plough the soil become as light as to "blow," as it is usually termed, manures are readily at hand to restore their natural adhesiveness. On this point, however, I apprehend an error exists. A soil to be made lighter by cultivation should really be in fallow; for "sand seems to have been gradually formed by the attrition and rubbing down of the various solid substances that are found in nature, especially such as are of the siliceous, calcareous and stony kinds." Although in this matter tillage assists the influence of natural causes, still the operation is so exceedingly slow as to be almost imperceptible.

To these remarks I would subjoin an interrogatory. What reason, Sir, can you assign, why the plough which so admirably subserves the purpose of the grower of uplands should be supposed to be unfriendly to the labours of the sea-island planter? It is not true that necessity compels the former to seek its aid. The black population of the upper districts exceeds that of the lower by several thousands. This subject is one of deep interest and should frequently be brought to the view of your readers. If, from the reduced value of Cotton, as much money cannot be made now as formerly, we should endeavour to supply the deficiency by augmenting the product of our crops. The general principles of domestic economy too should be rigidly enforced on our plantations. No article should be purchased that can be cheaply raised. In effecting this purpose, the plough will constitute an invaluable assistant. It will, in fact, give us all that we desire, and I aver, that compared with our present system of husbandry, the labour of the planter will not be increased, but very sensibly diminished. Let us, therefore, remember, that a patch of rice for the table, of peas for cows, of turnips for sheep, of

a larger crop of corn, oats, pompions, &c. &c. for the general uses of the plantation, will ensure us more comforts, lessen our dependence on others,* and curtail our annual expenses.

In relation to the more general cultivation of fine Cotton, I submit my opinion with great diffidence. I have not, perhaps, bestowed upon the matter that calm deliberation which it so justly merits. If on investigation the facts and arguments here adduced should be deemed insufficient to the maintaining of my position, I shall at any rate be gratified, that I had been instrumental in directing the attention of the sea-island planter to a subject of paramount importance at this time.

Respectfully, your obedient servant,

WHITEMARSH B. SEABROOK.

P. S. The following extract of a letter from a highly respectable commercial house in Liverpool, dated 10th of April, is confirmatory of the position, that as a crop fine Cotton is hereafter to be preferred to the common qualities of long staple. "Sea-Island Cotton is ½ to 1*d.* per lb. lower, and as the Egyptian Cotton of the last crop is of a greatly improved quality, it *is used for similar purposes as the common Sea-Islands, and interferes with their sale.*"

ART. II.—*Account of Progress made in the Culture of Sugar in the neighbourhood of Beaufort; by* EDWARD BARNWELL.

"Beaufort, February 25, 1831.

Dear Sir,—Yours relative to my experiments with Sugar Cane could not be replied to with satisfaction before this late date. My large boiler containing 250 gallons, to my great disappointment, not arriving from New-York before the 1st of November, prevented my entering upon the boiling of either sugar or syrup until the 1st of January. By which unfortunate delay, the cane was so injured by

* Northern hay, cabbages, beets and other notions are always to be found in this State, as far North as Columbia.

fermentation during the hot weather of November and December, and then by the extreme cold subsequent to the 23d of December, freezing and destroying the upper half of almost every cane, that I was compelled to boil the whole into syrup.

The last year there were 3 acres of ratoons and 4 acres of planted-cane in culture. One acre of the plant-cane yielded 288 gallons of the syrup a specimen of which I send you. The inferior quarter of this acre was counted and numbered 5550 remarkably fine cane. The land was the best for cotton and well manured with cow-pen compost. The cane in this acre was planted in double rows on the broad lists 5 feet apart, the cane cut with 3 to 5 eyes, and distant from the ends of each other 6 to 10 inches.

From these 7 acres I have sold 10,000 cane. Planted 4 more acres, at near 5,000 cane per acre, and boiled 1100 gallons of syrup, with the loss, I am confident, of one-fifth by heat and frost. The cane intended to be manufactured was put horizontally in long stacks of 150 feet and eight high, the ends turned within (directly contrary to sheaves of rice) an opening of 1 foot preserved through the middle of the stacks, a plenty of cane trash thrown over the tops to shelter the cane from sun and frost, and corn-stalks over the trash, or any weight to prevent the trash being blown off by high winds.

The severe frosts of the last season destroyed the eyes of the cane as deep as midway of the stacks. But from the cane below that, I have sold and planted good seed.

Not being determined as to the quantity I should plant this year, only a small quantity was mattrassed, after the manner directed in several of your publications, and this was perfectly preserved as you will perceive by the specimen also forwarded you.*

The canes were cut on the 30th and 31st of October, and remained 2 or 3 days for the leaves to wilt before being stacked.

The original 40 hills of cane which supplied me with seed have rattooned this year, the third, making four years of growth and producing fine cane each year. One-third of an acre of these 7 acres, were rattoons of two years, and 2½ acres rattoons of one year. The balance, were canes planted the last week in February, 1830. The rattoons

* These canes were in a very sound condition.—*Ed. So. Agr.*

were deficient in many spots, from various accidents, but many places in a low springy part of the land planted for the experiment, failed by being too wet.

The plant-cane certainly yields more than the rattoon, but not larger, where the latter is as well manured and cultivated.

Should further information on this subject in any particular point be desired, it shall be given with pleasure if in my power, and am,

Dear Sir, yours, very respectfully, &c.

EDWARD BARNWELL.

ART. III.—*Account of some Experiments made in the culture of Clover; by* THOMAS PARKER.

"Rocky Grove, Abbeville District, 29th April, 1831.

Dear Sir,—The correctness of the opinion so generally prevalent throughout our State, that the heat of our sun is too intense and our soil too acid for the successful cultivation of red clover, is now much questioned; and as a spirit of inquiry on this subject, so important to us, is awakened, an account of two experiments made with red clover in this neighbourhood, may be acceptable to some of your readers.

In the spring of 1823, Col. B. H. Saxon, sowed in a lot used as a plantation garden, a little red clover seed in two parallel drills about 60 feet long, and at some distance from each other. It came up well, was frequently hoed and kept clean, and grew luxuraintly. It was allowed to go to seed and shed its seed on the ground. The spring was a wet one, or rather what planters term a dripping season. The soil a deep, rich, black earth, somewhat inclined to be moist, with a stiff clay at the bottom. The year after, the space between the drills was covered with clover, as well as a considerable distance on both sides; and although it was a very dry year, the clover grew luxuriantly. It was not cut, but allowed to go to seed. The third year the lot was added to the adjoining field and the clover was ploughed up and the field planted with Indian corn. The clover appeared to have been completely destroyed. The

fourth year wheat was sown in the field, and when cut, the clover was found to be thick on that part of the ground where it had been growing two years before. It was suffered (the fifth year) to remain, and it grew with such luxuriance as to attact general attention. It was not mowed, but suffered to go to seed and the seed gathered. The two next years (sixth and seventh) the ground was again ploughed up and planted in cotton. The next year (eighth year) it was sowed with wheat, and this year (the ninth) has been planted in cotton. There is now a great deal of clover to be seen on the ground.

With the seed collected from this little patch, of clover Col. Saxon sowed about one-fifth of an acre in 1829, in the following manner. In February he sowed oats, ploughed it in, levelled the ground by dragging a heavy brush over it, and sowed thereon the clover seed. When the oats were cut early in July, so little clover was to be seen, that it was considered as a failure, and no more was thought of it until late in the fall, when the patch appearing very green, an examination took place and the ground was found to be well covered with clover. The clover grew finely, and in June, 1830, was cut, and yielded a heaped up wagon-load of excellent hay. This clover patch was really a beautiful sight before it was cut. The second crop was permitted to go to seed and the seed gathered, with which Col. Saxon sowed last February a few acres upon oats, as he had done in 1829. This patch of clover is now in luxuriant growth, is beginning to bloom, and will shortly be fit to mow.

I have learnt that in the neighbourhood of Cambridge several persons have for a few years past cultivated red clover in small patches with success, for the purpose of cutting and feeding away when green. The soil in that neighbourhood is a mulatto soil, which invariably is high, loamy, with a stiff clay below and generally loose and very deep.

These instances of the successful cultivation of red clover in this State, together with those already recorded in first volume of Southern Agriculturist, pages 250, 251 and 399, where success has been shewn to attend its culture near the sea-board as well as near the mountains, will, I hope, induce some of the planters and farmers of our State to make more extensive experiments with this most valuable grass, and communicate their result for the benefit of

others. I am informed that Mr. J. E. Colhoun is cultivating it to some extent and with considerable success in Pendleton District; if so, I hope that gentleman will favour your readers with another communication on the subject.

Respectfully,

THOMAS PARKER.

ART. IV.—*On the General Management of a Plantation; by* W. W. HAZZARD.

"West Point, (Geo.) 5th April, 1831.

Dear Sir,—You request to know what is my general system of management? I endeavour to employ those means in conducting the internal or domestic police of the plantation, which in my judgment is deemed best calculated to promote the comfort and contentment, and suit the condition of the subjects over whom they are intended to operate, and at the same time, secure subordination and good order.

These means should be assuasive and just, as well as imperative and effective. To this end I rarely punish myself, but make my driver, virtually an, executive officer, to inflict punishments; that I may remove from the mind of the servant who commits a fault, the unfavourable impression, too apt to be indulged in, that it is for the pleasure of punishing, rather than for the purpose of enforcing obedience and establishing good order that punishments are inflicted, as it is no pleasure to a humane judge to sentence a fellow-creature to be hanged, and at one fell swoop plunge him into eternity.

To impress this more forcibly on their minds, when they have urged as a plea, that they are servants, and must submit to the will of their masters, who can do as they please: I have addressed them in a mild and simple manner, assuring them that the laws of the land have secured to them rights, which a master dare not violate, without incurring the risk of a heavy penalty, "by imprisonment and labour in the Penitentiary, for a term not less than one, nor longer than five years," and "it is the duty of the Inferior Courts of the several counties in Georgia, on receiving in-

formation on oath of any *infirm slave* being in a *suffering* situation from *neglect* of the *owner*, to make particular inquiry into the situation of such slave, and render such relief as they in their discretion may think proper," and " they are authorized to *sue* for and *recover* from the *owner* the amount appropriated for the *relief* of *such slave*."

This protection which the benevolence of our laws has thrown around their persons, to save them in old age and infirmity from want and wretchedness; the boasted philanthrophy of Europe and the Northern States have never extended to the poor, old, white man!! I have told them too, that a soldier for disobedience of orders may forfeit his life, while they for a similar offence are only chastised: because it is the interest of a master to preserve the health, vigour and life of his servant, which produces a moral connexion and attachment betwixt master and servant, that freak, violence or misrule seldom severs.

When any quarrel or disturbance occurs on the plantation, one or two not implicated are examined in the presence of the accused, who have the right to correct false statements, and establish their innocence, by reference to other testimony, which is immediately produced by the driver, or if absent, and the case an important one, judgment is arrested until the necessary information can be procured.

I never permit a husband to abuse, strike or whip his wife, and tell them it is disgraceful for a man to raise his hand in violence against a feeble woman, and that woman too, the wife of his bosom, the mother of his children, and the companion of his leisure, his midnight hours. If the wife teases and provokes him by her nightly clatter, or crabbed deportment, and he complains and establishes the fact; she is punished, but it sometimes happens that the husband petitions for her pardon, which I make it a rule not to refuse, as it imposes a strong obligation on the wife to use her tongue with less bitterness, and be more conciliating in her behaviour.

If the driver suffers any irregularities on the plantation, or careless work to be repeated in the field with impunity, I repremand him in private, then publicly; and tell him, that as a religious man, as he professes to be, he should recollect, that if he cannot be faithful to his earthly master

who is at all times near him, providing food and clothing for his use and comfort; that the scriptures have declared, he cannot be faithful to his heavenly master whom he has never seen. If this simple mode of reasoning, fails to excite his pride, I then appeal to his passions, and rouse his fears by moderate punishment. This being one of the rare instances, where the master, or manager should inflict the punishment, and not degrade the driver by allowing a private to punish; which will humble a driver and prostrate his authority, that should be absolute.

If one negro steals from another, or from me, the driver is required to take of the marauder's goods and chattels an equal quantity, and restore the loss, or the thief is certainly punished if he cannot make restoration, or if fair promises are made, time is allowed for restoration. Drunkenness, if riotous, would be punished by lying in the stocks all night and drinking a pint of warm water. If a negro is sick a pint of corn is deducted from his allowance every day: because if he is really sick the nurse supplies him with good gruel, he therefore, does not require corn, and if he is merely shamming, a reduction of rations, like stopping a sailor's grog, will induce him to be more active in the performance of his duties.

The driver keeps an account of this sickness, and renders an account every Saturday of the work done, an acre notches on a stick, and in the same manner on his walking stick. So that if any mistake or fraud is committed, I immediately detect it; if his listing, bedding, and planting accounts do not correspond.

He also keeps an account of the number of calves marked, branded and altered; the names, colours, and qualities of our hounds, and the cause of their death; the time we plant vegetables and how they produced, with a list of flowers in the parterre.

Thus have I endeavoured to give you a brief sketch of the internal police of the plantation. To encourage industry and increase the comfort and contentment of these people, I allow every one, a task of ground, and a half task for each child capable of working. They have one Saturday to prepare, and another to plant their ground, and afterwards are assisted with a mule and plough, when it can be spared. They manage it their own way, and the entire produce is appropriated to their own purposes not subject

to my control, and raise with it as many poultry as they please. I give to families having six children living, one cow, with the male issue; reserving the heifer calves. When the family increases to ten children living, I require no other labour from the mother than to attend to her children.

Whenever they are sick a careful nurse comes in the morning, reports their case, gets the necessary medicine and administers it, or the patient is personally examined.

With regard to the agricultural department, if we do not intend to clear land, as soon as the crop is laid by, and all the corn-blades stripped, dried and housed, we commence listing (in August) at the rate of from one and a half to two tasks to each full hand (able bodied man or woman.) As soon as the listing is completed we clean out old ditches, dig others, and repair the fencing, if a late crop delays cotton picking. When the crop is gathered and prepared for market, we commence bedding, by running two furroughs directly through the alley, so as to break it up well, and then bed with the hoe, at the rate of from two to two and a half tasks to each hand, as the ground may be heavy or light.

We first commence planting potatoes in large flat beds without cutting them; then early peas, (which are now up,) corn, and lastly cotton, in all just five acres to each taskable hand, that is every negro capable of working over two tasks of ground generally in a day, and sometimes they have a part of the day, having finished their task. The corn is planted three feet apart, and thinned to one stalk; we formerly planted on the list, but find a good flat bed the best, as it saves a hoeing and elevates the plants above the smothering weeds around it. The cotton is planted on large, flat, wide beds at eighteen inches or two feet distance, and thinned down to one or two stalks as the soil is loamy or sandy.

On the third of April the whole crop was planted and the side hoeing commenced, as we never hoe down if it can be avoided, considering it ruinous to the crop.

We are cruelly calumniated, and reproaches with a keen point have been hurled at the slave-holder, ever since the sanctity of law has checked the avidity of gain, and the tradesmen in human flesh have become the snivelling philanthrophist, mourning over the objects of their traffic.

But the condition of these people in South-Carolina and Georgia is infinitely preferable, to the plebians of Rome, and the canaille of France, the Circassians of Egypt, the Gilden of Flanders, and even the peasantry of polished England, and not to be compared with Asiatic and African wretchedness. Here the slave is not required to pay a burthensome tax; he cannot be forced into battle, or made to do militia or jury duty: while the humane laws of Enggland transports the African from the land of his birth, the home of his children, to sacrifice their lives in the cause of a king, they have never seen, and in defence of a government they know nothing about, and derive no benefit from; where a lawless press-gang can tear from the bosom of a helpless family their only protector, their chief support, and drag a ploughman from his plough, merely to increase the warlike array of an ambitious monarch, or shed the lustre of renown on some royal favourite dotard. Yet so strange is the inconsistency of mankind, that this system of slavery unto death, has received the halo of approbation, and the sanction of custom has reconciled all generations to it, while we are vilified for improving the condition of these indispensable auxiliaries to Southern Agriculture.

Hoping that I have embraced and not exceeded the object of your inquiry, or the purposes of the Agriculturist, I am, Sir, with my best wishes for your success,

Very respectfully,

W. W. HAZZARD.

ART. V.—*Directions for Performing several Modes of Grafting; by* SUMMERVILLE.

Sir,—Every gentleman farmer has it in his power to be his own gardener, by which means he may have a well assorted kitchen-garden—green-house plants for the ladies—flowers in succession—a nursery of fruit trees, &c. &c. As grafting is not generally understood, I have here

given a short account of the most successful method of performing that work, which the most delicate hand may do.

Before I proceed to the method of grafting, it will be necessary to mention what stocks are proper to graft the different kinds of fruit on; for instance, apples should be grafted upon stocks raised from the kernels of the same kind of fruit; for the graft or buds of these trees will not take well upon any other stocks. Apples can be raised of a superior quality. I have known good cider to be made thirty miles west of Charleston; the apples that are brought to Charleston market are only seedlings.

Grafting may be begun any time after the middle of February, provided the weather be mild—the sorts proper to begin with are, pears, plums and cherries—apples may also be grafted. The first thing to be done is to prepare the grafts, and it must be observed that these must be young shoots, such only as were produced last year, for those that are more than of one year's growth never take well. The shoots or grafts you may begin to cut from the trees in the first or second week in February, in mild weather, and lay the lower ends of them in dry earth in a warm border, till the grafting time. The reason for cutting the grafts so soon, is, because the buds will begin to swell fast, and if the grafts are not cut off in proper time, the buds will be too far advanced, and the grafts by that means will not take kindly with the stock, or at least not shoot, so freely. For the general supply of apple stocks for common standards and large espalier trees, they are raised principally from the seeds of any sort of apples or wild crabs. The time for sowing the kernels of apples for stocks, is either in November or February, they may be sown in beds three and a half feet wide, sow the seed moderately thick, and cover them a full inch at least with earth, the plants will be up in about four or five weeks, and in the autumn or spring following, the plants are to be taken up from the seed-bed, and planted in nursery beds, and the succeeding spring they will be in order to graft upon.

Pears are generally grafted upon stocks raised also from kernels of any of their own kind of fruits, likewise by grafting them on quince stocks, which stocks are generally raised from seeds, cuttings, layers, or suckers. Pears may be grafted on white-thorn stocks. The season for sowing the kernels of pears to raise stocks, the transplanting,

and the time of grafting, is the same as mentioned for apples.

Cherries are propagated by budding, or grafted upon stocks raised from the stones of the common black or red cherry, or on stocks raised from the stones of any other kind of these fruits, but the two first are the most proper for the purpose, because they generally shoot much freer than any other. The seeds of the cherry for raising stocks to graft on to be sowed and managed in the same way as apples and pears are. Plums may be grafted or budded on plum stocks, raised by sowing any of the common sorts of the same species of fruit, also raised occasionally, by suckers sent up from the roots of any kind of plum trees. The time of sowing the stones to raise the stocks, is in November, they require the same management in raising and planting out in nursery lines as the others, observing, that they must be kept perfectly clean from weeds and grass, as well as all other seedlings. Stocks raised from seed, being mostly of a stronger growth, are commonly called free stocks.

There are several methods of grafting, I shall only take notice of those which I practice with the greatest success, such as whip-grafting, cleft-grafting, and crown-grafting. Previous to grafting you must be provided with a proper grafting knife, a quantity of strong bass-strings, or large cotton yarn will answer if bass-string are not convenient—these bandages are to tie the stocks and grafts firmly together, and some well wrought clay, to clay them round over the tying, to secure them from the air and wet, if the grafts are put on a few inches above the surface of the ground. I have been in the practice of drawing up a small hill of earth round the graft, and about two or three inches above the tying, pressing it even and close all round, I have found this plan to answer in a dry season, it is better to use well wrought clay.

The stocks intended to be grafted, must, previous to the insertion of the graft, be headed down, within five or six inches of the ground. When the stocks are small, and headed down so low let one shoot of the graft run up to any height that may be thought proper, then top or cut off at that height, to cause it to throw out branches to form the head. Have your scions or grafts, &c. ready, then begin the work by cutting off the head of the stock at a convenient height according to this rule, above hinted, this done,

fix on a smooth part of the stock, where headed off, and then pare off the rind with a little of the wood, in a somewhat sloping manner upwards, about an inch or an inch and a half in length, then having the scions cut into lengths of four or five eyes each, prepare one to fit the stock, as above, by cutting it also a little sloping, so as to exactly fit the cut part of the stock, as if cut from the same place, that the rinds of both may join in every part, then cut a slit or tongue about a quarter of an inch in length upwards in the scion, and cut a slit the same length downwards in the stock to receive the said tongue, in that manner fix the graft in the stock, taking care that the sap or rind of both may meet, or join as exact as possible in every part. Having thus fixed the graft, let it be immediately tied with a string of soft bass, bringing it in a neat manner several times round the graft and stock, taking care to preserve the graft in its due position, and let the bandage be neatly tied, and immediately cover the place with some grafting clay, observing to bring the clay near an inch above the top of the stock, and a little lower than the bottom part of the graft, let the clay be rounding and of an oval form, and take care to close it well in every part, that no wet, wind, or sun can enter, to prevent which is the sole intention of the clay, for without that precaution the operation would prove fruitless—in the same manner proceed with the rest. The grafts must now and then be examined to see if the clay any where falls off or cracks, if it does it must be renewed with fresh clay, by May the grafts and stocks will be well united, and then take off the clay, and loosen the bandages.

Cleft Grafting.—The next general method of grafting is that by cleaving the stock, commonly called cleft or slit grafting, because the stock is cleft, and the graft put into the cleft part and is performed in the following manner. The proper sized stocks, on which this kind of grafting is performed, are generally about an inch or an inch and a half, and even two inches or more, in diameter. First, with a strong knife or small saw, cut off the head of the stock, and pare it very smooth, this done, fix upon the smooth part of the stock just below where headed, to place the graft, and on the opposite side to that, cut away part of the stock about an inch and a half, in a sloping manner upwards, so that the crown of the stock may not be more than

about half an inch broad. This done, prepare your graft or scion, which is done in this manner: observe to cut your grafts into due lengths, leaving four or five eyes to each, then take your sharpest knife, and pare away the bark and some of the wood at the lower end of the graft in a sloping manner, about an inch and a half or two inches in length, and then cut the other side in the same form, making it to have a wedge-like shape, but let one side of it, which is to be placed outwards in the stock, be left near double the thickness of the other side. The graft being prepared, take your strong knife, and place it on the middle of the stock, cross-ways the top of the sloped part, and with your mallet strike the knife to the stock, observing to cleave it no farther than what is necessary to admit the graft readily, then place the grafting chissel or some instrument a little way into the cleft, at the sloped part of the stock, to keep it open for the reception of the graft, which then directly introduce into the cleft, on the uncut or upright side of the stock at the back of the slope, inserting it with great exactness, as far as it is cut with the thickest edge outwards, so that the rind may meet exactly every way with the rind of the stock, the graft being placed, then remove the grafting chissel, taking care not to displace the graft, this done let it be tied and well clayed as in the manner directed above, in the work of whip grafting.

Or, if in this cleft grafting, you choose to put in two grafts, it may be performed on large stocks, which must be twice cleft, and the clefts must not be across but parallel to each other, so as to fix the grafts in the stock, and bind and clay them as above. This kind of grafting may likewise be performed on the branches of trees, that already bear fruit if you desire to change the sorts. Early in May the grafts will be united, then take off the clay and loosen the bandages, and apply fresh clay to the tops of the stocks.

Crown Grafting.—This way of grafting is commonly practised upon such stocks as are two large and stubborn to cleave, and is often performed upon the branches of apple and large pear trees, &c. that already bear fruit, when it is intended to change the sorts, or to renew the tree with fresh bearing wood.

The manner of doing this sort of grafting is first, to cut off the head of the tree or stock level, or of any particular

branch of the tree which you intend to graft, and pare the top perfectly smooth, then prepare your grafts, which is done by cutting one side flat, and a little sloping about two inches in length, making a kind of shoulder at the top of the cut, to rest on the head of the stock, and pare off only a little of the bark towards each edge of the other side of the graft, then raise the bark of the stock, first by slitting it downwards, and then have a small wedge of hard wood, one side of it formed somewhat roundish, the other flat, let this instrument be driven down gently between the bark and the wood of the stock or branch, the flat side towards the wood, driving it far enough to make room for the graft, then draw out the wedge and slip down the graft, placing the cut or sloped side towards the wood, thrusting it down as far as the cut, resting the shoulder thereof upon the top of the stock, and in this manner you may put four, five or six grafts, or as many as may seem convenient, upon each stock or branch, and bind them round with strong bass. When the grafts are all thus fixed, you must then immediately apply a good quantity of well wrought clay, bringing it close about the stock and grafts, and raise it at least an inch above the stock in a rounding manner, so as throw the wet quickly off, to prevent its lodging or getting into the work which would ruin it.

The trees which are grafted this way, will take and shoot very freely, but there is, for the first year or two after grafting, an inconvenience attending them, and that is, the grafts are liable to be blown out of the stock by violent winds, but this must be remedied by tying two or three sticks to the body of the stock or branch that is grafted, and the grafts are to be tied to the sticks. The grafts will be pretty well united with the stock by the middle of May. The best time for performing this kind of grafting is about the fifteenth of March, for then the sap will begin to be in motion which renders the bark of the stock much easier to separate from the wood to admit the graft. This manner of grafting may be performed with great success on trees that never had borne any fruit, only observe to take the graft from a bearing tree.

Scions taken from the roots of old fruit trees answer well to graft on, provided they have been one year planted out in nursery lines before they are grafted.

SUMMERVILLE.

ART. VI.—*Account of the Management of Pushee, the residence of* Dr. HENRY RAVENEL; *by the Editor.*

Were it possible to obtain from the different sections of this and the adjoining States, an account *in detail* of the management of a few of the best plantations in each, much interesting matter would be obtained, and by giving publicity to the practices of districts distant from each other, yet cultivating the same articles of food or commerce, much benefit would arise, by enabling the planters to compare the various practices and plans—detecting those which are erroneous in their own, and adopting those which appear better in others—much valuable information might in this way be collected which now is entirely lost, because it is believed to be of little or no value, by those in whose possession it is. There is much done on every plantation which is worthy of being noted, but because it happens to be an every-day business, it is overlooked and undervalued. There are, also, many things which appear too trifling to be made the subjects of special communications, which in connexion with other matter, would prove both useful and interesting. But how shall this be obtained? We have in vain endeavoured to get it from those who could furnish it. There remains, therefore, only one other way, and that is by making an agricultural tour, throughout the various parts of the Southern States. We cannot, at present, carry this into effect, whatever we may be able hereafter to do. In the mean time, however, we intend availing ourselves of such opportunities as we may have of obtaining information, by inspecting the operations on such plantations as we may visit, and by conversing with such planters as we are in the habit of meeting with yearly in our city. In every instance, where we can with propriety, we will give the names of the parties from whom such information is obtained, but, whenever, from any cause, it is withheld, we hold ourselves responsible for the respectability of the author.

It was during the month of March last that we paid a short visit to Dr. Henry Ravenel, of St. John's, Berkeley, and whilst there, we made such inquiries as enables us to give a concise account of his management. The place on which he now resides, (Pushee) has long been in the possession of his family,

and when he became proprietor of it was much exhausted, by long and severe culture. Not having land enough cleared to enable him to alternate his fields, he judiciously determined to endeavour to restore their fertility by the free use of manures. He accordingly set himself seriously to work to effect this, and his efforts have been crowned with considerable and deserved success.

We are aware that a large majority of the Southern planters would not consider the attempt to renovate old lands, the most judicious course that could be pursed. They consider it better policy to clear land, cultivate it whilst it can produce any thing, then abandon it and clear more, rather than attempt to restore the fertility of old fields by manuring. They think it, on the whole, more economical, that is, that more can be made by following this plan for a certain number of years, with a given number of operatives, than can be, by that of manuring. Of this we have strong doubts, for the only instances we have known, of this experiment being fairly tested, the results have been decidedly in favour of manuring, but these were conducted systematically and for a number of years. The manuring of fields, however, as a late writer in the Agriculturist observes, is a matter of calculation, and if after we have fairly made it, we ascertain that it is better to clear lands rather than manure, then surely we ought so to do—but we must be careful not to deceive ourselves, by making partial calculations, and those based on false premises, the effect would be felt when the remedy could not be easily applied. The great fertility of newly cleared land is apt to mislead us—we take as a datum, the product of a few of the first years, and against these we array a fearful number of supposed obstacles, which are to be encountered in renovating old lands. Among these are the slow returns at first and the difficulty of obtaining manures in sufficient quantities, for all of the land under culture. But we must bear in mind that the old and new land, will in a few years change places, and this will surely and rapidly take place, unless manures be resorted to, to keep up the fertility of the new land. As to the difficulty of obtaining manures, this is more imaginary than real, for most planters have the means amply within their power, if they would but make use of them, of collecting and preparing as much as they need. The only real obstacle in the way is the want of system. It is the neglect of this which occasions

so much waste and loss on our plantations, not only in manures, but in many other things. We are too much in the habit of performing all of our operations designed for the improvement of our lands in a helter-skelter kind of manner, and at irregular periods. This is much more strikingly displayed in our manuring systems, (if that can be called a system in which there is almost a total want of arrangement.) Instead of the collecting of materials for manures being considered as one of the most important transactions of a plantation, it is on many totally neglected, and on those on which there is an attempt made, (with some few honorable exceptions) it is held as of secondary consideration, and made to give way to every other business. As long as this course is pursued, it is reasonable to suppose that the planter must fail in his attempts to renovate or even preserve the fertility of his fields. But let him adopt a different course, let him consider the collecting, preparing and applying of manures, as of primary importance, let him set aside a certain number of hands for this special work, and let these hands be employed on no account in other work, and he will find that all his supposed difficulties will vanish, and he will be surprised to discover how much he may accumulate with a very small force. Let not our readers think that we are now dealing in speculation. We know of several instances where this has been most successfully practised, and Dr. Ravenel's plantation is a strong case, to which we will confine ourselves.

The manures used on this place are taken chiefly if not wholly from the stables, cattle, sheep and hog-pens, and the quantity derived from these sources is sufficient to manure the whole of his provision and one-half of his cotton crop, using twelve wagon loads to each acre; but to acquire this, a regular plan is perseveringly followed, and as the result is satisfactory we will here detail it. All of the pens are stationary and substantially built. The cattle-pen occupies about one-third of an acre, and is divided into two parts, the one for milch cows and oxen, the other for dry cattle and yearlings. In this, there are no sheds, but it is contemplated to erect suitable ones during the ensuing summer. The hog-pen is large and there are several separate divisions (all under sheds) for the feeding and fattening of such as are wanted for use. The sheep-pen is also large and fitted up with sheds—all of these are at

some little distance from each other, and plentifully supplied throughout the year with litter. The cattle, together with the sheep and hogs are nightly penned, and the two last are kept constantly in an enclosure, consisting of 150 acres of swamp and 100 acres of highland—here they find an abundance of food; and so accustomed are they to being brought up every night, that there is not the least difficulty in collecting and penning them. During the winter they, in common with the cattle, have the range of all of the fields, and are only confined to this enclosure during the summer. The number of animals which are nightly penned, are from two to three hundred, and from such a large stock well supplied with litter, it may be supposed that a large quantity of manure must be made under judicious management, and that this is the case may be learned from the fact, that for manuring of the present crop, one thousand one hundred and twelve wagon-loads (equal to four thousand four hundred and forty-eight single horse-cart-loads) of manure were carted out and spread in the fields. The plan pursued is simply this—an old woman is kept constantly employed in raking trash in the woods, and an infirm fellow, (who is incapable of performing any laborious work) with a mule and cart is employed in bring it in and littering these pens in which the cattle, hogs and sheep are regularly penned every night—the same plan is pursued with the stable. *These hands are never taken from this work* on any account. It is their portion of plantation work for the year, and although, both together could not in the field perform the work of one able bodied hand, yet in this way, they are of more value than the best of them. Dr. Ravenel estimates their value to him, (employed in this way) at the labour of six hands—that is, were he deprived of the manure made by them, he would be obliged to work six additional hands to make up the deficiency, which would necessarily accrue in his crops. We doubt whether the estimate be not too low. Six hands might enable him for a few years to retain what he would otherwise lose, as he would be able to cultivate so much the more ground. But would his fields be in the same progressive state of improvement, which they now are, or rather would they not be in a few years nearly unfit for cultivation, and he be obliged to resort to the too common practice of clearing new fields and abandoning the old ones. If this would be the result, their value cannot be estimated, by the

difference of products of one or two years, but the future condition of these fields must be taken into consideration. This plantation, as may be supposed under such management, has undergone a considerable change for the better ever since this system was adopted. We regret that on referring to our notes, we do not find the improvement in the crops of cotton and potatoes stated, although the products were mentioned several times to us. We find, however, that in the course of eleven years, the product of the corn-fields have been doubled. They at first yielded not more than 10 bushels per acre, and now from 18 to 22, and with every prospect of increasing productiveness.

The results obtained from the other crops have been equally satisfactory, and we need scarcely say that the system is persevered in. We have seen that one of the crops has been doubled, in the last eleven years,* and this has been effected under considerable disadvantage. No rotation of crops is pursued on this place, but the *same crop* is planted every year on the same field. The reason assigned is, that those two great scourges of the planter, *nut* and *joint* grass are scattered in patches in some of the fields, and the utmost care is necessary, to keep them within their present limits. This is much to be regretted, for had a judicious rotation been also adopted, when the manuring system was commenced, there can be little doubt, but that the improvement would have been much greater.

The theory on which a rotation of crops is based, is that each plant requires a peculiar food, which it draws from the soil, leaving (after it has exhausted all which it can appropriate to itself) an abundant supply for other species, consequently, that when a particular crop has been planted so long in one field, that it will no longer yield enough to repay the labour of culture, another differing from the first, in some of its characteristics, will not only grow, but yield as abundantly as if the first had not been cultivated there at all, and in fact, several are considered as excellent preparatory crops for others. Practice has confirmed what theory advanced, and so well is this established, that it is usual, where a rotation is adopted, to manure the fields in succession, applying all of the manure to one particular crop, and this field receives no further assis-

* Of the others, as we have already stated, we have no note, and are unwilling to speak of them from recollection.

tance, until all of the other crops of the rotation have been cultivated on it, and in due course that which was first commenced with, is to be again planted. The favourable results obtained, fully justify this procedure, and it is even adopted in the garden where manures are usually to be had in abundance. Had it therefore been possible to have adopted a rotation, and all of the manures been applied to particular fields each year, their products, no doubt, would have been much greater, and the improvement much more evident. But even as it is, it is highly satisfactory, and our planters must be indeed wilfully blind if they do not perceive the immense advantages which they may gain from pursuing either this or some other similar plan for the collecting, preparing and applying of manures. That we pay too little attention to this branch of agriculture, we believe all of our planters will admit, but in admitting it, each one has some excuse which he thinks, covers his case, and which his neighbours have not. The general one, however, is that manures are not to be had, and when they are told of the immense quantities which are placed on each acre, cultivated in Europe, they content themselves with the idea that it is their dense population which enables the farmers there to effect this. But those manures which are so readily obtained there, are either of animal or mineral origin, vegetable manures are to be had in much more limited quantities. Now the first is necessarily attendant on population, and as this is more or less dense, so is the facility of obtaining it greater or less; but mineral and vegetable manures are to be had in every newly settled country, especially the latter, and although animal manures contain the greatest quantity of nutriment in the smallest space, yet, vegetable manures are equally as appropriate, if not more so, and we cannot plead that we have not enough of these around us. Our great error is in the want of system, and if we would but proceed more systematically to work, we would soon produce a material improvement on our plantations. The plan we would suggest is that pursued by Dr. Ravenel, and also by James Cuthbert, Esq. and by him recommended in his Address before the Agricultural Society of South-Carolina. These gentlemen employ a certain number of hands exclusively for the collecting and carting into their pens trash of every kind, but more especially pine-straw and leaves, and

these hands are *never* taken from this employment, on any account, the consequence of which is a daily augmentation of the manure heap, and the quantity made is very great. Our planters are too much in the practice of attending to this at detatched periods, and consider it of so little urgency and importance, that it may be deferred, until there is leisure, or rather until they find nothing else for some one or other of their hands to do, and even those who wish to pay some attention to it, are in the habit of doing so only at long intervals. The quantity of manure which will be collected, is therefore, uncertain, and no calculation can be made, based on the application of certain quantities to any one crop.

We all have it in our power to collect, if not as much as will manure at first, the whole of our fields, yet at least much more than we do now and without incurring any additional expense. It only requires that a few hands be set apart for this special purpose, and that these to be employed in nothing else. If they can collect more trash than is requisite for the pens, let them be employed in carting up mud, (either salt or fresh) and placing this also in the pen where it will prove a valuable auxiliary, and be itself much improved, for both of these are benefited by exposure before they are used. But on no account ought these hands to be idle or taken off from this employment.

Dr. Ravenel's mode of culture does not differ materially from that usually practiced. The cotton is planted about the last of March or the commencement of April, on beds four feet apart. Manure is first applied on the list, this is bedded on, and the cotton planted. The thinning is commenced with the first, continued with the second and finished at the third working, when *each* stalk is left at a distance of from two to three feet, according to the quality of the soil. It receives from five to seven hoeings, but is not gone over in the order in which it is planted. Those fields which are most grassy are first attended to, although not in their turn. We certainly think this a much better plan than that which requires each field to be worked in its regular rotation.

Potatoes are planted early and whole, as they are not so easily pulled out of the ground by crows, &c. and, moreover, yield vines earlier than those which are cut; no difference has been observed in the product of those planted whole and those which were cut. The *slips* (called by some

vines) are planted, on ground from which oats have been harvested. These (oats) are manured in the row with cotton seed, which is found to be the very best mauure for them. Six quarts of seed to the row of 150 feet, is considered as a sufficient quantity, much more than this causes such a luxuriant growth that they fall—about 30 bushels per acre are produced; the yield of the potatoe crop we do not recollect.

With respect to the *time* of planting corn, Dr. Ravenel differs materially from the most, if not all of his neighbours. Instead of planting it early as is usually done, it is the last crop that he plants, and seldom, if ever, before the 1st of May. The most critical period in the growth of corn is, as every planter knowns, when it is earing—if we have showers then, the probability is, that something of a crop will be made, however bad the season has been prior to that. But on the contrary, let the season be ever so favourable at first, if there be a drought at the time of earing, the hopes of the planter will be blasted. It is, therefore, desirable, that it be planted at such time, that it will pass through this critical period during the rainy season. Now we believe it will be found that June and the early part of July are usually very dry, and that the rainy season commences about the last of July or in August. That his corn may benefit by these rains, that it is planted so late; and his success has been such as induces him to persevere in the plan. He has often made excellent crops, when his neighbours have lost theirs, or obtained but very indifferent ones.* The mode of culture is this: the manure (at the rate of 12 wagon loads to the acre) is spread in the alleys, and a very large *list* made, on which the corn is planted, but in order that the manure may not be disturbed, (which would be the case were hoes used in making the holes,) cotton dibbles are employed; the rows are 4 feet apart and the stalks 3½ feet. The crop receives but two workings, and a good one, has been made with only one hoeing. The product we have already stated—the blades are exposed to the sun but for one day which is found sufficient to cure them. Among the corn, peas are planted in *drills* extending from

* The practice of Col. J. Brian of Cooper river, corresponds with that of Dr. Ravenel, and the like results attend it; thus confirming the correctness of the course pursued. We hope some of our readers will institute experiments on, and test this point fully.

hill to hill and not in chops as is usual, they are thus better enabled to support themselves, and the product is greater, perhaps, owing, in part, to a greater space of ground being occupied by them.*

Another practice pursued by Dr. Ravenel is deserving of the attention of every planter. It is the manufacturing on his plantation, with his own slaves, from the wool and cotton produced on the place, all of the clothing and blanketing necessary for the use of his negroes; and this is done without subtracting any thing from the effective force of the plantation. The spinning is done during rainy days and by pregnant women. These last are also thus employed for a week or two after the usual period allowed for their confinement, instead of being placed at once to field work. After the crops are laid by (in the month of August) and during the winter, *one* fellow is employed in in weaving, and he accomplishes from 6 to 700 yards. The negro cloth is fabricated of wool and cotton, specimens of which we saw—it is thick and substantial, fully equal to the service required of it.

The blankets are entirely of cotton, wove very thick and are much liked by the negroes. Some cotton blankets which were made and given to them 16 years ago, are still in use among a few of them. The greatest objection made to the use of this kind of blanket by our planters, is that it is liable to take fire, and they fear accidents from the known carelessness of negroes; but were we to refuse to make use of all articles from which accidents might occur, how miserable would our condition be, and how many of the comforts we now enjoy would we reject We would neither ride a horse, nor live in a wooden house, because we might be thrown from the one, and the other might take fire, and to be consistent, we must either build mud or brick cabins for our negroes. Let us not, therefore, exclude cotton blankets, when both economy and policy require of us to make every exertion, to support not only ourselves, but our State also. That these fears are not, wholly groundless, we admit, but thus much we have authority for saying.

* Some of the planters of North-Carolina sow peas broad cast over the whole of their corn fields at the last ploughing, which by this operation is covered. They are permitted to grow at random, and in the fall of the year as many as are wanted are gathered, and the hogs turned in to glean the balance. The stubble is ploughed under for manure.

that on a plantation in the neighbourhood of Dr. Ravenel, where cotton blankets have been used for some time, *no accident by fire has occured, and the negroes are remarkably healthy.*

The wool which is required by Dr. Ravenel for the making of his negro clothing is furnished by his sheep, a large number of which are entirely *black*, and he is endeavouring to get rid of all producing white wool. The black wool and cotton produce a neat gray cloth, whilst the other has rather a dirty appearance unless it is dyed, and we see no reason for incurring this expense and trouble if by keeping only black sheep, the same end will be obtained. The sheep are sheared twice in the year, viz. about the first of April and the 1st of September, and are supposed to yield about one-third more than when sheared only once. The practice at first was thought to be injudicious, by many of the planters, but experience has led him to believe not only that more wool can be obtained in this way, but that the sheep are equally as healthy, if not more so, than those which are sheared but once.

Thus have we given a concise sketch of the management of this place. Our time did not enable us to make a more minute investigation, or to accept of the many invitations extended to us by our friends of Pineville and its neighhood. It is a source of regret that we could not. The planters of this section of our State have long been reputed to be most excellent agriculturists. It would, therefore, have been peculiarly gratifying to us, could we have visited and inspected the operations of their several plantations, and in no place could we have spent a portion of our time, more pleasantly. The planters of Pineville and its neighbourhood, are not only celebrated as such, but are also among the most intelligent and hospitable of our State, and it was with regret that we took our leave, without being able to avail ourselves of our contiguity to gain a more general knowledge of their husbandry.

PART II.

SELECTIONS.

ART. I.---*Essays on Agriculture; by* F. A. ISMAR.---*No. 2.*

[FROM THE AMERICAN FARMER.]

The dung materials are very different in their qualities and forces, by which they influence the plants. The dung of animals may be considered as submitted to the following rules, viz. well fed and fat beasts give more and better dung, than lean and ill fed animals. The quantity of dung depends also upon the quantity of pasture, the strawing, and the further treatment. Show cattle give the best dung. The dung of horses is dry, warm and abounds with salt. It consumes itself very rapidly by its rapid and hot fermentation. Its penetrating fomentative products are injurious to the vegetables. It is most fitted to warm the hot-beds, and on wet, cold clay. It is excellent to be mingled in strata on the general dunghill. The dung of cattle is the softest and best. It ferments slowly without strong heat and lasts the longest in the earth. That moderate fermentation makes it fit for every soil, and represents it as the quintescence of each dunghill. The sheep dung ferments dry and rapid, but is too hot. The plants can bear it only in small portions; and it does not last long in all kinds of soil. It is very good for indolent, heavy, cold, clay grounds, because it warms and enlivens them. The dung of goats has the same qualities, while that of hogs is exactly the reverse, mild, aqueous, slowly fomenting, and little hot. Some call it for that reason cold and indolent dung. But in meadows and nurseries it is of great utility, and mingles usefully on dunghills. The dung of fowls is strong, very nourishing and dry. The plants digest it not in large quantity, for it is hot and of a penetrating nature. But ordinarily, that excellent dung is to be had only in small portions. Where there is a large stock of poultry, it is advisable to collect it in a particular hill. In larger quantities it is very effectual on superficial manuring of the grain, and is an estimable stimulant of the *ley*. The best and warmest of all dungs is that of pigeons, fitted for every kind of culture, and giving very remarkable advantages also in small portions. But in order to bring its effects into activity the interference of rain is necessary; without which it would burn every thing, and be therefore more obnoxious than

useful. In gardens and vineyards it does the best services; in Holland, it is advantageously used to strew over linseed fields. The most powerful of all dungs are the excrements of man. It ferments exceedingly quick, is hot and penetrating. It requires to be mingled and brought on the dunghill with great precaution. If it should be used by itself, it is best mingled, i. e. two cart loads of human dung, one of lime, and ten of earth, by which man obtains the best dung after a short period for an acre of wheat or barley. But this excellent dung is almost entirely lost in all countries by the stupidity and negligence of man. In this respect we live almost in a kind of wild state, we preserve it during months, and often years in our houses, where it destroys the foundations of the buildings, pestiferizes the air in the room, and therefore contributes to ruin the health. Some people are fools enough to purposely place their privies near their dwelling houses. By this long preservation, and the evaporation within the houses, the best power of it is lost, and by the privy houses in the free air the sun produces the same result. In order to avert all these inconveniences there is but one means, and it is at the same time the most useful to man, and for the acquisition of the whole mass of this excellent dung, viz. the introduction of moveable and *inodorous* privies. Should the police, so carefully collecting fines for actions, which often are not only offences against the existing laws, (I speak of all countries I have seen, and not only of the United States,) should they not take a step to protect in this way the health of the citizens, and to forward agriculture, without whose progress neither mayors nor aldermen could have so pretty dinners for the money of the poor people, who often labour with hunger, while their servants luxuriate on their blood and sweat? They certainly will say, that such privies cannot be every where introduced; but that is not true. They can be introduced in old, as well as in new buildings. They consist of two barrels. The one is united by a cap with the privy beam going down the building. The first or principal barrel receives every thing, and has a double bottom with a *copper strainer*, by which the liquid is separated from the excrements and collected in the lower bottom, wherefrom it passes into the inferior or second barrel connected with the first by a zinc pipe. By this separation of the excrements from the urine, the bad smell is prevented. As soon as a barrel is filled it is emptied on the dunghill, or what is better, on a particular compost dunghill, i. e. on earth and other remains, ready to be covered with the excrements. In a few months an excellent dung is obtained. It is also good to have a water-tight hole for the urine, which immediately is to be mingled with nine times its quantity of water, and to add some handfuls of *unburnt* limestone. In a few days the best liquid dung is thus obtained. The expenses for such a privy are inconsiderable. It consists

of two barrels, which every carpenter of a village can make, and the zinc and copper apparatus may also be had for a trifling sum. The barrels may last from thirty to forty years, especially if always cleaned with water, when emptied.

Among the other dung materials the decomposition of animal bodies is best done in pits. The bodies are covered with lime and earth. The dissolved mass is mingled after some time with a tenfold quantity of vegetable mould. The effect of this manure is extraordinary. The bones are either decomposed by lime, or (which is better,) used in the form of powder. This powder is sown at the same time as the seed, or shortly after it. Fields of wheat, tobacco, beans, peas, turnips, artificial and natural meadows improve extraordinary by it, and all weeds are destroyed. This powder can be obtained nearly without expense. The bones are collected in butcheries and kitchens where they are considered as useless, are dried and thus cautiously toasted in a lime or bakeoven, and finally pulverized. A hogshead of bones gives 1240 lbs. of meal, to which added 100 lbs. cook or dung-salt are the most excellent manure. Fields and meadows obtain by this method a thrice, and often six times higher value. The other remains of butcheries should be managed like animal bodies in a pit. After ten days the mass may be turned and again mingled so as to add ten carts of earth to one cart of the first mixture. Then the whole must remain quiet during a month, before they are used. This manure is best used in the spring to strew grain, meadows and food herbs.

The remains of manufactories and work-shops can either be prepared for dung or thrown upon the general dunghill. In the first case, i. e. wool shreds are to be cut in pieces of one or two inches square, to strew over the earth and to plough under. They give to a light soil the advantage of retaining the humidity of rain and dew. Remains of leather, horn, hairs, old shoes, &c. are of the same use with trees, &c. All these remains, decomposed with ashes and lime, and thus mingled with dung become a very good manure. Asparagus, flowers, and gardens in general cannot have a better manure than putrid wood. *Oilcakes* are ground, and previous to the last ploughing, the powder is strewn over a light soil. Six parts of *Oilcakes* and one of lime, mingled together, are very advantageous to every soil, but most particularly to cold loam ground, if strewn over the seed, especially of wheat. But this mixture can only be used after ten days, when frequently turned during that time. In order to avoid grinding, they are in several countries thrown into the ley. England and Holland have the greatest advantages from these oilcakes. The remains of oils are also good manure. There is made a mixture of warm potash at equal parts, which are frequently moved within a barrel, four-fifths of boiling water are added, and the barrel again well turned. It can be used in its

liquid state, or mingled with vegetable earth. The oils are also mingled with putrifying animal or vegetable parts. All shed plants of the earth and the water are by themselves natural dung materials. The water plants must previously be dried, collected in masses and mingled with three parts of vegetable earth. So the mass remains eight days, is turned, and a portion of lime added. So the leaves of trees, and stopples are used, if not strewn in the stables. The plant of potatoe strewn over clover fields manures also exceedingly. The mud of lakes, rivers, rivulets and swamps is a good dung, used either as it is or mingled with lime. It forwards the fertility of a light soil, and is advantageous in meadows as in fields. Mingled with lime, chalk, or stable dung, and remaining in rest for some time, it is best fitted to fertilize heavy seed fields and meadows. The dung of the streets possesses the most powerful materials to forward vegetation. It serves to mingle with the excrements of privies or on the dunghill. The rubbish of walls should be carefully collected, in order to be mingled with other dung or earth. Malt stuff is with propriety much esteemed as dung. It is strewn over the green barley, clover, turnips, &c. The water itself in which barley has been malted can be used, for it contains a great portion of that vegetable spittle, taken from the barley. It is best when mingled with ashes.

Tan, when putrified and strewn over a meadow has an extraordinary effect. Mingled with lime or salt that effect is still greater and more rapid. Man acts best with it in washing it when coming out of the pit and mingled with an equal portion of horse dung; this composition is to be protected against rain, but not to become entirely dry. After the first fermentation a second portion of fresh horse dung is added, by which a new heating begins, which must remain till cooled. This now gives by means of lime a compost which has the best dung power. Soot is such an excellent dung, that it should be more carefully collected. By itself it operates best in a sandy, limey soil. A mixture of two parts of soot, two of lime, and ten of earth is strewed over the green winter seed in the spring, and immediately over the summer seed, when it begins to become green. Previously to use, the lime, the soot, and the earth must rest quiet a fortnight after having been mingled. After that period it is well turned; the lime laid over and after further six weeks it is ready to use; but then the whole is cut in as small pieces as possible by the spade. For humid meadows this compost cannot be enough recommended, for it frees them the best from moss and miss. The turf previous to being manured is to be dried; when it becomes almost powder, it is accumulated three or four feet high and covered with stable dung. After some time, in order to forward fermentation, the whole mass is turned, which operation is repeated after three or four weeks, and then

one-fifth of lime is added. In a few days an excellent manure is obtained. This result can also be obtained without stable dung, in basting it with dung ley, or in mingling it with potash, soda, chalk, &c. 100 lbs. potash suffice to be saturated with the acid of such a quantity of turf, as is necessary to dung an acre of land. In a light sandy, limey soil, turf is not only a very advantageous manure, but it contributes also to give more cohesion to the soil. For a loamy soil it is not very recommendable. Pulverized, it is strewn over the seeds or bad meadows. In Holland and England there is another kind of making use of the turf, i. e. by burning it first to ashes. These turf ashes have produced surprising results. In the spring sown over young clover, it secures rich harvests, and in the next year very much wheat. The ashes are carefully sown out of the hand on a still and misty morning. Sown each little hill where a hop plant grows, it has a good result and kills in the same time all obnoxious vermin.

The various kinds of urine contain many salts, alkalies of animal matters, and therefore great dung forces; but that of man possesses these qualities in the highest degree. It is used in two ways: first as mixture, and second as ley. In the first case as either the dunghill or a mass of earth, turf and lime are watered with it, and so is produced a compost manure for a light, sandy, and siliceous soil. Many agriculturists form also a kind of thick liquid by adding to the urine, earth, turf, lime, plaster, lime, ley, slaked ashes, remains of wood, &c. in order to water the fields with. The *dung ley* is the most eminent manure proceeding from that urine, a kind of dung spirit, a drink for vegetables prepared from dung and urine. The plants find nothing so nourishing as this liquid, composed by one part of fresh prepared manure and urine, and three parts of water. The process of obtaining it is the following: the stable in which, on both sides are the animals, must have in the midst a large way, on whose right and left side is a gutter twelve inches deep and as many broad. In the ordinary dung time these gutters are half filled with water, in which is brought the fresh dung with straw and urine. The whole is carefully moved in them with a fork, and trampled firm by the servants with their wood shoes, so as to press out the dung. Under these two gutters there are two reservoirs made with ordinary oak timber of the best quality, but water proof, and six feet deep. It is still better to have them out of the stable in order to prevent a bad smell. In every case there must be out of the stable a large reservoir, in order to empty therein the small ones, which is done by means of a spigot. The remaining dung is brought on the dunghill. When in this way all fluid of the gutters is emptied into the small reservoir, the triple quantity of water is to be added, if from show animals the quintruple, from horse and sheep urine the quadruple, from hu-

man urine nine times as much. Now the mass empties in the large reservoir, where it ferments. During the summer it is done in a fortnight, during the winter in four or five weeks, and in a reservoir of a very large size in two months. In adding human urine, half the time is gained. When the ley foams no more when moved, but is covered with a kind of skin, the ley is done. That skin is taken off and brought on the dunghill. It can be brought on the fields at any time, except during rain, very strong winds and heat. During the winter it is strewn on the snow which covers the seed, also on meadows. The same is done in the summer on all seed and meadows, but on the latter never when the grass is already too high. On clover it is done immediately after each cutting. The effects of this ley overtop all ideas. To use it in this way barrels are placed on a cart with broad wheels and with one horse. In order to distribute it equally on the fields, and to prevent the obstruction of the hole of the spigot, there is a small board in the middle of the cart, upon which falls the liquid and spreads round like rain; further a stick should pass from the upper part of the barrel to the bottom, which always plays within the hole and prevents its obstruction. There is to be made a ley from each kind of urine previous to its use, for its natural state it is highly obnoxious and burns the plants.

The cleansing water of the kitchen, the liquid of butcheries, wash-houses, distilleries, breweries, workshops, fabricks, and baths must be collected in the urine-reservoir, or better in a special reservoir, and there remain for fermentation. When done it is used like the dung ley, and is excellent for seeds and meadows.

The water of flax and linseed dairies, when spread over meadows is superior to urine, and its application so as the use of the remains at the bottom of the pits destined to this toasting, is highly recommendable.

The mud remaining on the ground after the high waters of the rivers, does the same on our fields as the Nile does in Egypt. They happen in Italy and some parts of Germany, frequently. Rivers or branches of them are conducted in closed places, and the water here retained till the mud is settled, in order to level the low grounds successively, or as it also is the case, to gain a new mass of dung.

The *green manures* are all crops ploughed under. The more succulent the plants the more useful they are: peas, beans, clover, &c. but particularly wheat and rye in full blossom. Stopples halding are to be avoided if great utility shall be produced. But the advantage is still increased, when previous to the ploughing, the green field is sown with lime, chalk, or plaster. In my my first number I have already spoken of the establishment of Messrs. Hood and Downes, at Bristol, wherefrom,

I think this very day, to take a quantity for Bolton, where the result, I think, shall convince the most incredulous.

In the third number I shall treat of the dung means; their qualities and treatment.

ART. II.—*Upon the Advantages of Shallow Sowing; by Mr. Freiherrn von Voght, of Flotbek.*

[TRANSLATED FROM THE GERMAN FOR THE FARMER'S MAGAZINE.]

(Continued from page 312.)

I may, therefore, state my present opinion with regard to the object of the here proposed mode, viz. that the seeds may lie at the utmost equal possible distances, be as little disturbed as possible by the harrow in their situation, and yet not lie above an inch deep, when they will certainly come to perfection; and this as concerns the winter sowing, without any exception. In the spring sowing it might, with regard to the light dry lands, be limited to this, that the corn should, indeed, be sown after the small harrow, wherewith it comes to lie in more even and at suitable distances; but then if one fears the waste which may arise in consequence of the possible drying up of the seeds remaining uncovered, it should be ploughed under as shallowly and closely as possible, and frequently crossed with the sharpest harrow. I always sow oats shallow in loamy soils, and do not mind the loss of a few uncovered seeds, for which the quicker growth and the stronger tillering of the majority of the plants richly repays. Hereupon I must also observe, that the good effect is only to be looked for when the surface has been harrowed extremely fine to the depth of an inch.

In all the foregoing experiments the seed which succeeds best is that which lies one inch under the surface of well broken earth. The higher it is kept the better, but it must be protected from the sun's rays by a covering, however thin it be. As a voucher for correctness of the deductions to be drawn from my observations, I may be permitted to quote, word for word, from the first volume, p. 283, of Burger's Instruction Book, what this justly renowned person says upon the matter, since this useful book may not be in the hands of all my readers. "The more lightly the seeds lie under the soil, the more powerfully does the warmth act upon them, and so much the more freely do they enjoy the air; and since they need but a small portion of moisture, which is either previously in the soil, or may be expected, it is clear that when equal in other respects, the preference is due

to the lightly, rather than to the more deeply lying seed. The lightly lying seed, with a fair degree of moisture, comes quickly up out of the earth; besides, a quickly appearing seed has essential advantages over one more tardy; for it has more time to take root ere it is forced by the summer's heat to sprout forth. Shallower sowing requires fewer seeds, because a smaller number perishes; besides, the plants are healthier, since the shoots mounting from the deep soil often exhaust their whole strength thereby, and then either directly die off, or only present an insignificant root and a weakly plant; for nature allows only a certain quantum of nourishment to the seed as is needful to expand the germination of its leaf and its first root. But if all the nourishment is consumed by the stalk whilst under ground, nothing is left for the leaf and the root, and the plant withers, or grows sickly. The root ever forms itself only next the surface of the earth; and when we place the seed deep, these first push their shoots to the surface, and form other roots in a near point of contact with the air. It is never found that the first roots raise themselves *from below upwards*; on the contrary, the reverse takes place. In support of this assertion we may here avail ourselves of the interesting experiment of Mr. Ugazzy, in *André's Oekonom Neuigkeiten*, July, 1817, page 76. Between the 5th and 15th of June, 1817, he examined the best fields, where the seed had been ploughed under, according to the custom of the country, five several kinds of corn, how deep the roots stood in the earth, and what influence the various depths had upon the appearance of the plants. He has expressed his subsequent experience in the following tables:

KINDS OF GRAIN.	*Depth of the Roots in the soil.*					*The average Produce of stalks.*			
	1 inch.	1½ inch.	2 inches.	2½ inches.	Total.	1st class.	2d class.	3d class.	4th class.
Winter Rye, - - - - -	742	221	32	5	1000	2 3-5	1 2-7	1	1
Wheat, - - - - -	765	215	17	5	1000	3 4-7	2 1-8	1	1
Summer Wheat, - - - - -	645	304	42	9	1000	4 1-6	2 3-5	1 1-11	1
Barley, - - - - -	631	317	41	11	1000	3 2-5	1 3-4	1	1
Oats, - - - - - -	672	241	64	23	1000	1 1-2	1	1	1

"By this it appears that the roots of from two-thirds to three-fourths of all the corn planted were only one inch under ground and that these were the very plants which had put forth most ears; one fourth of the plants had their roots an inch and a half deep, and had only about half as many stalks as the first: the roots at two inches depth showed but four in a hundred, and

those at two and a half but nine in a thousand; yet these latter had only put forth a single ear; whilst the former, in the rye and wheat, produced from two and one-fifth to four and one-sixth. Hence it is clear that the lightly lying seed, if it be sufficiently covered with earth for the corn to germinate, and the germ protected from the immediate effects of the air (or rather from the sun-beams,) has the advantage over the more deeply lying seed, since the shallower seed comes out more quickly, and finally exhibits a more powerful growth, than the deeper lying one, which either never brings its germ to the surface at all, or only produces a weakly plant."

In addition to quoting such weighty testimonies, I may be permitted to show that the observations of all modern physiologists not only perfectly accord with mine, but also explain and confirm them. All agree that with the access of warmth and moisture to the farina of the fructified corn there proceeds a fermentation, which dissolving the sweet farinaceous part, forms a carbon that would dissolve the embryo, if the germinating power in the shoot were not more potent than the chemical, and were it not able to free itself from it through the accession of oxygen from the atmosphere. The sorts of corn belong to the fourth and last division of the *monocotyledones embryones*, which have a *root-knot* and *farina*. The seed of the gramina not only contains *farina*, but the germ is also enfolded in peculiar cellular sheaths,* which open a passage upwards through the first root leaves, and swelling below, thence push forth the slender fibrous roots. The substance of the *farina* is conducted into the divisions of the *principal knot*, and become suitable nourishing matter. The fleshy farinaceous *cotyledon* has no *absorbing vessels*, and must from its own *mucilage*, which becomes a nourishing *emulsion*, get the nourishment by means whereof the embryo lives. The *embryo* contains the incipient plant and little root: these are separated by the *principal knot*, which makes the partition between the ascending and descending motion; out of it passages pass into the *cotyledons;* the infant plant begins to breathe through the opening of the outer skin; then the little juice-pipes return again into the *knot*, and thence into the plant itself. This component consists of a granulous central mass of firm structure, from which the passages arise. This middle point of the embryo was named by Agricola *glanduapinealis*, by Fishcher and Treviranus *centrum vegetationis*, out of which the life and all growth proceed. This little cylindrical body, called in French

* These sheaths are those which in the deep lying corn are forced to lengthen themselves from one inch and a half to two inches, and which exhaust the whole nourishment that the imperfectly fermenting *farina* can give to the germ, which moreover is deprived of the nourishment from the seed-coverings (cotyledons,) which can hardly work unless exposed to atmospheric air.

collet, which continues to live in perennial plants when leaves and roots die off—by Turpin termed *ligne mediane*, and by Le Mark *the life-knot---is actually the seat of the germinating power*, and is found in all freely growing plants near the surface of the soil. From it arises with inconceivable power the growth and expansion of the whole plant, and in graminous herbs can be carried up by an ascending cone *(plumula ascendens,)* and a descending one *(plumula descendens.)* Lastly, this collet, which is the centre point of activity, and the source of existence, first forms the *knot* just below the surface, from which, when the growth of the plant is vigorous and unstinted, new small *knots* diverge, and from them the additional *crown* roots shoot forth contemporaneously, and thence the leaves and stalks increase. But in order that all this should happen, it is requisite that the seed-corn be so deposited that it want for nothing which is necessary to its expansion. For that purpose are required atmospheric air, moisture, loose earth, warmth, and to a certain extent light and manure.

Atmospheric Air.---The *embryo* is, as we have seen, surrounded with carbon, which, however necessary it becomes to the plant in its farther growth, would be fatal to the germ, if it were not by the co-operation of the air freed therefrom through the oxygen of the atmosphere. *Saussure* the younger, made, in 1804, the important discovery, that the atmospheric oxygen gas, which is attracted by the germ in its expansion, does not remain in the plant, but only serves for the formation of the carbonic acid gas, which is delivered in the germination. Already the oily farinaceous saccharine matter ferments in the *seed covering*, and generates oxygen. This becomes absorbed, and exhales carbonic acid gas, but for this fermentation atmospheric air is also necessary. Oxygen is so advantageous to the germination, that *Humbold*, with highly acidulated muriatic acid, brought old seeds to germinate in six hours. Although too much of it is fatal, yet it is even on that account needful to the germination, since it frees the germ from the carbon. No germ comes forward in the carbon. Every agriculturist must recollect what his sown fields have suffered if the soil, shortly after the sowing, becomes muddy through a heavy rain; how requisite a sharp harrowing over would be. This the best farmers hold to be good for their wheat, in order to facilitate the access of the atmospheric air.

Moisture dissolves mechanically substances dissolvable in water, but the water is decomposed through the organization of the plant, whose oxygen binds itself with the carbon of the seed, and carries it away. The hydrogen then remains, being left for the nourishment of the germ. Thence is it advantageous, when the beneficial moisture of dew is not withheld from the seed. That the loose finely pulverized earth is profitable as regards the more easily penetrating of the little roots, that it helps the ad-

mission of air, warmth and moisture, it is unnecessary for me farther to dwell upon. Warmth depends, indeed, principally upon the nature of the soil and the influence of the weather. Every body knows how essential it is to the progress of vegetation. The seed must at least be placed in that situation, in moist soils, where it may not be deprived of the genial influence of the sunshine. Light, moreover, is also requisite for binding the carbon during the first unfolding of the plant, by attracting the hydrogen and expelling the oxygen united with light; although it is likewise true that the oxygen which is so necessary an incentive for the germ, may through the excess of sunshine be developed too soon.

Manure in the soil, as assisting the fermentation, delivering also warmth and oxygen, and attracting moisture, presents nearly all that is requisite for the powerful expansion of the germ. A tolerable rich soil, as every agriculturist knows from his experience, is extremely serviceable to the germinating power. It is very clear that all these advantages, whereof experience taught me the utility, which also appeared evident to other good husbandmen, are all proved and explained here by the unanimous opinion of our best physiologists.

I have, therefore, nothing more to state, unless to assure my readers that in all the experiments made for the purpose, I have gone by no theory, but wholly unprejudiced have observed the course of nature, bearing in my mind that saying of Lord Bacon of Verulam, of which an agriculturist proceeding on principles similar to mine has so admirably availed himself---"*Not to suppose or imagine any thing, but to find out how nature manages what she abides.*"

Art. III.—*On the Culture of Indian Corn.*

[FROM THE NEW-ENGLAND FARMER.]

I observed a publication in your paper, vol. ix. No. 33, dated Plymouth, Con. March 7, 1831, subscribed B. in which the writer states his method of raising corn on green sward, and he plants no other with corn. I understand him that it is not advisable to plant any other ground with corn. I am opposed to this opinion for the following reason. I will endeavor to show the advantages, which result from not planting green sward with Indian corn. If potatoes are planted on green sward there is little or no danger of worms injuring them; and if well man-

aged, the crop is likely to be as good the second year. The ground of course will be more clear, and better worked over, than by tillage for corn. The ground after the potatoe tops are taken away for manure, is free from obstructions for cross ploughing and mixing, and with common usage well fitted for a crop of corn, without the least hazard of being injured by the grub-worm, which too often disappoints the farmer of his crop. It is certain that corn will grow well after potatoes, though they are very much against the growth of many vegetables. By planting corn after potatoes the farmer obtains not only a more sure but a much better wheat and grass.[1]

Mr. B. states that he feeds his ground intended for corn as close as possible. For this he gives no reason; but I think there is great reason against it. I am confident there is great benefit derived from ploughing in vegetable substances, and especially if green. I have known good crops of corn without any manure, except those substances ploughed in. In one instance I doubled my crop, side by side, by ploughing one piece a month later than the other, from the benefit of green vegetable manure.

Mr. B. says he spreads his manure and ploughs the ground into ridges, leaving a path between the ridges unploughed. I observed his manure has been spread from before ploughing until hoeing on the surface. Every good farmer knows that it has thus been exposed, by evaporation, the effects of sun, air, &c. to a great loss of virtue. At the first hoeing Mr. B. ploughs or breaks up his balk, and if tough, he admits it to be hard hoeing. I presume it is; I have tried a small sample in a similar way, and found it very hard tending my corn. Mr. B. states that one of his neighbors tried a level moist piece of ground in Mr. Phinney's mode and it being a wet season he nearly lost his crop. Thus it is seen that Mr. B's advice is altogether in favor of ridge ploughing even of green sward for a crop of Indian corn. I will endeavor to show more plainly the advantages of level ploughing. In the first place it is presumed that the manure in either case is equal, and the labour of getting it on and speading it the same. Now I had rather plough an acre smooth, by ploughing every furrow, than cut new furrows, and leave one half unploughed: besides, it being much harder for the team, it requires twice the attention in laying the furrows even, and there is the balk to plough between the rows. The advantage in harrowing, pulverizing, levelling and lightening the cracks of the level-ploughed above the ridge ploughed, I consider very great. I had rather tend four acres of the level than one of the ridge ploughed. Mr. B. says his neighbour almost lost his crop But this must have been because he did not plough right, not because he did not ridge up his ground.[2]

In ploughing most level ground for tillage, be sure to plough in a direction to drain, and in small lands.

The ordinary mode of tilling low level land with corn is to enter on one side, and plough a large flat land; having no reference to draining it, and paying little or no attention to the depth of ploughing. Consequently in this moist and soft ground it is ploughed one foot deep. If the manure is spread and ploughed in, without any addition, say ten fifty bushel cart loads, the probable crop, with good attendance is ten bushels of corn to the acre. If four loads of old yard manure is put in the hills in addition, it is twenty bushels. It is seen that I allow but little in this mode of tillage. But my experience teaches me that it is full enough. Now this seems to be discouraging in tilling low ground with corn. But I tell you not to be discouraged; I am sure those soils are the richest on our farms, and they can be improved so as to produce the most corn as well as most other vegetables. Cart on the ten loads of good manure, and spread it even. Plough with a sharp plough with a foot, as we call it, for a guage on the beam; it is far preferable to a roller, as it levels off small protuberances, instead of jumbling over them like a roller. Plough this ground in small lands, in a direction to drain six inches deep. Tend it well, and the probable crop is forty bushels. Add four loads of manure, and put it in the hill, and the crop will be fifty bushels. Now there is encouragement. But plough the ground with the same apparatus in the same direction and the same manure, three inches deep, with the same good attendance, and the probable crop is 80 bushels per acre. In this last mode of tillage it is improper to put manure in hills. And if the four loads or more be added and spread carefelly on sward, and ploughed smoothly in and carefully harrowed lengthwise with a furrow, so that you turn back no turf and the whole attendance be good, you may reasonable expect 100 bushels, common evils excepted. I will observe that these remarks are founded on experience, and not in theory. This last mode I much prefer to all that I have heard of or tried, and I have tried all which promised the least success.[3]

I will briefly explain the causes of these different products. In the first and ordinary mode, the sward that is full and warm with vegetable manure is turned below the reach of the corn roots, especially as they run shoal on this wet ground, and if manure is in the hill it will spring a little from the effects of it. But there is nothing else to feed the corn, but the wet, cold, naked clods, destitute of any kind of manure, and the corn is subject to renewed colds from every rain or dew; hence it cannot thrive. On the other hand, if it be ploughed three inches deep, the sward full of vegetable manure, with the barn dung, and the rubbish are ploughed in, the soil will lay up light, and the sun and air having their effect to the depth where the roots will be found most

abundantly, and exactly in their elements, not suffering from drought nor wet, will thrive beyond conception. This is the ground and the mode of tillage that I shall principally pursue the coming season.

I choose to plant my rows across the lands and furrow, and as the sward rots, a light harrow has a good effect. I plant in a drill, made by a large tooth in a light horse harrow or a machine for that purpose. There can be no ploughing among this corn, nor any hill made.

I planted high ground last season, and to guard against drought, and to have my ground well prepared to sow winter rye, I made my drills 7½ feet apart, and dropped my corn, single kernels four inches apart in the drill. A part of it was three kernels together, one foot in the drills. One object in tilling this ground in this manner was to have it well prepared to harrow into it winter rye, at any time when I might think proper, without any other expense. I worked my ground so constantly with harrow, plough, &c. drawn by a horse, as to keep it perfectly clear and mellow, snug up to my corn, using the hoe only to clear the weeds round the roots of the corn. By this tilth my ground was kept in the most perfect and beautiful order that can be conceived and without a single cent's cost for the next crop. And I found no obstruction in getting in my rye while the corn was on the ground.

I will observe that I have not owned this ground long, before I tell you that it is much worn down by two frequent tillage. Consequently I could not expect a great crop, especially as I put only two loads of barn-yard manure per acre. This was strewin the drills, after dropping the corn. My crop exceeded my expectation. I expected only 200 bushels, but gathered 300 from about twelve acres. This mode of husbandry is somewhat new to me. I shall leave it for the reader to judge for himself the advantage. On my low ground I shall drill for my rows four or five feet distance, as the land will be much higher manured and not liable to drought. I am sensible that I get more corn from drill than hill planting. But I will give one hint to those who for any reason plant in hills. A general, if not universal opinion prevails that the seed corn should be spread in the hills, and much pains is taken consequently to spread it, and this they say they know to be the best method for a crop. They tell me the corn comes up when alone much stronger and stubbeder, shoot out, and far outgrows that which comes up together. This is true as far as respects the better appearance of the corn, when young. But this is not all which should be considered in a crop. The object should be to grow the most corn on the same ground. To convince farmers to change their practice and to plant their seed as nigh together as possible, they will be benefited from less labour and a much better crop, I fitted a piece of ground as equally

as I could and well for a crop of corn, with old dung in the hills. I fixed a machine with five tree nails, in an even circumference, eight inches diameter and stamped a number of rows, after being levelled, and planted my seed carefully in them. I took a staff and made one hole in a place, in rows fitted in the same manner by their side. The appearance of the corn planted by single kernels was far before the other while young. I am positive that every plant had from two to four shoots each; and I am as positive that there was not one on one stalk of the other, and they also appeared much slimmer. It is easy to conceive that the single planted was vastly harder to tend. This ground was warm and fair for a crop. As the season advanced, and became hot and dry, the single planted began to stop growing, while the others appeared to suffer for nothing, and throve beyond account compared with the single kernel planted, as that was very bushy, and so affected by drought that it produced but small ears, whereas the other had full large ears. I weighed the corn in baskets when harvested, before husked, and found twice the weight from that planted together, and believe there was more difference when shelled. Since that experiment I have taken care to plant my corn, that I planted in hills, as close together as possible. The reasons I give for this great difference in produce, from the different modes of planting, are, that corn requires a free circulation of air, and a good exposure of the earth to the sun, and a good unobstructed space for the root; and lastly, not to be over-stocked with any kind of vegetable, of which corn-shoots is the worst.[4]

I feel unwilling to leave this subject until I have given a full exposure of erroneous opinions and practices that prevail. A neighbour set out with a full determination to get a premium. His farm was under the highest cultivation; he was in the habit of procuring great quantities of manure and using it freely. In this way he prepared three acres of his best ground, and had given out word, with the greatest confidence, that he should get the premium on corn. He considered that his ground was as good as any in the country, and he was confident no one would manure as high as he would, and of course his ground ought to be seeded high. He also gave his corn the best of attendance. It throve wonderfully, it was a show, and he appeared to take great pride and satisfaction in it. It grew so high and slender withal, that it could not well support itself. The result was, that at harvesting he received only five bushels per acre.

A. R.

Portsmouth, N. H. April 11, 1832.

NOTES BY THE EDITOR.

[1] Dr. Deane, in his N. E. Farmer, expressed opinions similar to those of our correspondent with regard to the inexpedience, as a general rule, of planting corn on sward land; and says—

"it is apt to be its too backward in growth, and not to ripen well. But if we do it on such land, the holes should be made quite through the furrows, and dung put into the holes If this caution be not observed the crops will be uneven, as the roots in some places where the furrows are thickest will have but little benefit by the rotting of the sward. But if the holes be made through, the roots will be fed with both fixed and putrid air, supplied by the fermentation of the grass roots of the turf. In this way I have known great crops raised on green sward ground where the soil was a sandy loam, but mostly sand." This writer, and many others, recommend a crop of potatoes as preparatory to that of corn. E. Phinney, Esq. has been very successful in raising corn on green sward, and his methods of culture are described, pages 226, 266, of the current volume of the New-England Farmer.

[2] With regard to ridge ploughing, the following appears to us to be correct. "When there is reason to apprehend that the ground will prove too moist for this crop, it will be advisable to plough it into narrow ridges, and seed each ridge with one or two rows, as shall be most convenient. But sandy and clay soils should merely be turned over, in a flat furrow, and not afterwards ploughed so deep as to break the furrow. For clay, if mellowed too much, will become mortar in wet weather and bake in dry, and the sand will become too loose to support vegetation."—*Memoirs of N. Y. Board of Apriculture*, vol. ii. p. 20.

[3] Although such shallow tillage is contrary to the theory and practice of most cultivators, it is not without precedent. Earl Stimson, a celebrated agriculturist of Saratoga county, N. Y., raised very great crops by ploughing but three inches in depth. In the address delivered before the Saratoga Agricultural Society [republished in the N. E. Farmer, vol. v. p. 224, 252,] he gives the details of his mode of culture for Indian corn, and other crops, and remarks, "shallow ploughing and the application of manure to the surface, is contrary to the common theory, as it is contended by some writers that the manure loses its strength by evaporation, when so much exposed to the sun. There may be some loss by the exposure, but not so much as there is by ploughing it in deep. I should always wish, however, that the manure after being spread from the wagon, might be immediately mixed with about one inch of the surface either with the plough or harrow after rolling, as the decomposition is much quicker when it comes in contact with the soil, and in this situation it becomes a better conductor of the vegetable elements to the plant. Keeping the vegetable mould as near the surface as possible, I have found not only a great preservation to the plant against frost, heavy rains and severe droughts, but the sod below absorbs the wash of the manure, and thus prepares it well,

when turned back, for the next crop. As our new lands are much surer for, and more productive of crops, where the vegetable mould is all on the surface, the nearer I approach the same principle in cultivating the soil, the better I succeed in raising crops. I have received more benefit from three loads of manure applied as above, than from five when ploughed in deep."

4 In an able essay on the culture of Indian corn, by S. W. Pomeroy, republished in the N. E. Farmer, that gentleman observes, "I think four stalks together afford support to each other against winds, and are not so apt to send up suckers as when single, and there may be some advantage by concentrating manure, in forwarding the young plants during the cold season, which we frequently have in June." Judge Buel likewise says, "plant your corn in hills. The distance will depend on the kind of seed and strength of the ground," &c.

Art. IV.—*On Shape of Trees and Pruning.*

[from the genesee farmer.]

Very few persons seem to be aware of the importance of giving proper form to the young tree, or mending or improving its shape, at a later period. In the peach it is ruinous, sooner or later, to encourage two or more leading and principal branches, from the main stem; let them grow ever so straight and upright, they constantly recede by the pressure of repellant branches, and by the weight of fruit; until, after having nursed them to maturity, on the first windy day, you have the mortification to find it split at the crotch, and one or both branches ruined, perhaps at the moment of the ripening of the fruit.

The peach is peculiarly liable to this misfortune, as the seam at the crotch adheres with less tenacity than any other tree cultivated.

The same doctrine holds good with the plum and nectarine, but with less force, and in fact, there is but one shape that is to be tolerated, with trees that are allowed their full growth, and not restrained, or trained in any way; and that form is a straight centre stem, from the root to the terminate bud, with branches alternately projecting at judicious distances, both around the circumference, and the whole line of ascent, allowing no one to gain the advantage of another in excess, but by proper retarding

or encouragement, so to manage, as they shall present a cone, beautiful in shape, and strong to resist the wind, rains, and heavy weights of foliage and fruit.

Quince trees, by proper attention, may be made to have straight handsome bodies, and fine expanding regular tops, instead of the crooked, craggy, sprawling bushes, so generally cultivated.

It is also a great mistake to trim the stems of young trees too high, causing them to shoot up to premature heights, become top-heavy, and liable to be blown over, or badly leaned from their perpendicular and true position; which causes them to need staking, and tying, whereby they are apt to become chafed, and frequently ruined.

Trees in town gardens, which are situated between high houses and barns, are peculiarly liable to misfortunes by wind, which is caused to whiffle, whirl and eddy about with such force, as often to do great damage; in all such cases they should be allowed to send out limbs lower down, in regular order, with a straight centre, and handsome shape.

When peach trees get large and over-grown, or when they are apparently going backward from age, they can again be renewed by cutting off the whole top, at the collar next the roots, or at the first branching limbs, when a great quantity of shoots will put out and form handsome clumps, and bear well; indeed it is the Pennsylvania method of serving trees for the first bearing, which for seedling kinds do well; cultivated kinds should be cut above the graft. Prune all trees at the opening of the bud, and if you wish to be nice about it, cover the cut with grafter's wax, tar, or oil paint.

Art. V.—*On Forcing Figs.*

[from the Florida Herald.]

To the Editor—*Dear Sir*—I had long ago heard, but without placing any confidence in it, that some few of the Minorcan inhabitants of this city, were in possession of a secret in the use of oil that accelerated the ripening of figs: with two kinds of which, you know, our city abounds, and very fine ones; the large white, the earliest; and the large purple, the later.

Last week I found, that an old acquaintance of mine, from up the Mediterranean, had anointed a parcel of the white, quite

small, green and hard, in order to prepare a dish for St. John the Baptist's day, the twenty-fourth of the present month; and that she had done this in advance of only some seven or eight days.* This information, added to my own conviction of there existing a wonderful and wide spread affinity, but little known or even noticed, between oleaginous substances of all kinds, in both a sound and decomposed state, and vegetable health, progress and preservation, which I had derived from the use of them on the bodies of trees; in a rotted state, as manures, &c. I went to work on the 21st, and with olive oil anointed the bud ends or crowns of about forty, as a trial. Some of them I slightly punctured in the centre of the crown, with a blunt pointed piece of stick, previous to applying the oil, for the purpose of giving a larger dose. This, I think, brought them on a little faster; but as it inflicts a wound, however slight, there is dan- of the rain getting in and spoiling the fruit.

The results were, that though I had made the operation on a part of the tree which enjoys no sun after three o'clock, there was, on the second day, a visible difference of size in favour of those that had been anointed: for I had left on each small branch two or three figs untouched, the better to mark the progress of the others. And on the seventh day I had a plate of fine ripe figs at my breakfast; while, on the whole tree, a very large one, there is not one of what we call rare-ripes; nor any others attempting to *start* for maturity.

Besides having our figs several weeks in anticipation, this affords another advantage. When this fruit has approached to the stage of a general ripening, we frequently have showery weather that destroys by rotting, or spoils by rendering insipid, a large portion of them.

I shall continue the experiment on oranges, pomegranates, peaches, &c. for I believe the influence will be found, in a greater or less degree, general. I have no doubt of all fluid or soft grease having the same effect; but it would not do to use those that are offensive to the taste or smell.

With respect, your obedient servant,

GEO. J. F. CLARKE.

St. Augustine, 28*th June*, 1830.

* I have since ascertained that she used hog's lard.

PART III.

MISCELLANEOUS INTELLIGENCE.

Horticultural Society of Charleston.—We anticipate much good from the organization of such a society among us. Blessed with a mild and delightful climate where but little art is required to produce, nearly all the fruits and vegetables in common use in any part of the world; yet we are far in the rear of our Northern brethren. It is hoped, however, that this Society will effect much by inciting our horticulturists, to make exertions, which would not otherwise be made. As yet it has been able to do but little. The period of the year, at which it was formed and the unusually unfavourable season have operated much against it. It was the intention of the Society to have had a general and public exhibition in May, and they had offered premiums for a large number of flowers, fruits and vegetables, but the severity of the last winter and the backwardness and unfavourableness of the spring were such, that it was found to be impossible, to have one at all creditable to the state of horticulture among us at the season contemplated. The Society, therefore, determined not to have a public exhibition in May, but to leave the competition open for the whole season, and premiums will be awarded at the expiration of that time. We shall lay before our readers notes of its proceedings, and extracts from the minutes, whenever they may possess any interest, and we truly hope that our citizens will perceive the utility of such a Society, and give it all the aid in their power.

Extract from the minutes.—"The minutes of the last meeting having been read, specimens of Batersea and Drumhead Cabbages were exhibited by Mr. J. D. Legare; also, four new varieties of Turnips, viz. *long yellow, long white, small round yellow and round black.* The Cabbages were large and free from worms. The largest Battersea weighing 7 lbs. 1 oz. and the largest Drumhead, 9 lb. 11 oz. The Turnips were small and offered merely for exhibition, but their appearance, shape and flavour, recommended them to notice.

Mr. Legare stated that they had been sown merely to ascertain the varieties, and that he did not think their merits could be fully ascertained now, both on account of the particular season of the year at which they had been grown, and the excessive drought which had prevailed for some time past. The spring, as was well known to the Society, is the most unfavourable season of the whole year for the growth of this vegetable, they had moreover, suffered much from the prevailing droughts, the effects of which had been very visible on all vegetables. He hoped to give them a fairer trial, at a more propitious season, and would then report. The Society considered the Cabbages exhibited as being peculiarly fine for the season, being much larger than any exhibited in our markets this year.

On motion of Dr. H. R. Frost, it was *unanimously Resolved*, that the premium offered for the best cabbages be awarded to Mr. J. D. Legare, for the exhibition of several heads of cabbages, remarkable for their size. And also, that an honorary premium be also awarded to him for the several new varieties of Turnips exhibited by him.

The Chairman of the Committee of Fruits, reported that the only specimens of Strawberries exhibited, were from the garden of Judge William Johnson. That although there had been no competition, yet he

recommended that the premium be awarded to Judge Johnson, as they were not only very fine but superior to any brought into our market this season. Whereupon, it was *Resolved*, that the premium for the best dish of Strawberries, be awarded to Judge William Johnson.

On motion of Dr. S. H. Dickson, it was *Resolved*, that the annual address be delivered on the days of exhibition of flowers, fruits, &c. as specified to take place in May."

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Cocoons.—Some of the largest and finest Cocoons we have ever seen, were presented to us by Mr. Arthur Middleton, a few days since. They are perfectly white, and nine of them weigh a half ounce. We do not recollect the usual weight of Cocoons, but they are fully one-third larger than the largest we have seen this season. They are left at Mr. A. E. Miller's office, for exhibition.

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New Variety of Oats.—The avenacea farina, or true skinless oats, is the most valuable crop perhaps ever produced in this empire. It was grown in the season of 1830, for the first time it was ever produced in Great Britain, by T. Derenzy, Esq. of Clobeman Hall, who obtained the seed through a friend of his at Rotterdam, whether it was importedfrom Siniang, a remote district in China; and was quite unknown to the Europeans till within these three years. The advantages which this extraordinary and valuable grain possesses over all other kinds of oats are numerous, viz. When thrashed from the sheaf it is exactly like oatmeal, and is fit for immediate use for culinary purposes, and every other for which oatmeal is consumed, the grain being quite free from any particle of rind or husk. The flavour is delicious, and it contains much more farinaceous matter. There is, of course, a considerable saving of oats, and expense of kiln-drying, grinding, sifting, &c. and one peck of it contains more nutricious food for a horse than three pecks of common oats. The produce is most astonishing, the average being twenty-six barrels of fourteen stone to the Irish acre—the exact quantity grown by Mr. Derenzy on one acre. It was not sown till the 4th of May, 1830, and was reaped early in August the same year. It is remarkably hardy, and well adapted for this climate.

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Harvesting Oats.—It is much the best way to mow (not to reap) oats when beginning to turn yellow, whether they are wanted for fodder, or for the oats with the fodder. If a farmer wants to make the most of his oats, if they are ever so stout, let them mow them when beginning to turn yellow. Dry them well, thresh them as much as he pleases and his cattle will eat the straw in preference to the best meadow hay; and besides the grain will be much brighter and heavier than if they stand in the field till quite ripe, and the straw is spoiled.—*Detroit Courier.*

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Exportation of Cattle.—During the first three months of the present year, their have been exported from New-Haven to the West-India Islands nearly one thousand head of cattle, horses and mules, amounting in value to more than fifty thousand dollars; being a much greater number and amount than was ever before exported from this place in the same length of time.

—

Scours in Calves.—I will add a sure remedy against that dread to all breeders of cattle, the scours; especially affecting young calves; the use of a little pulverized chalk in any mess. I have used it with success. All young calves are subject to this disorder, especially if brought up by hand, and even on the cow I have known them to be greatly injured by it, especially when the ground was covered by snow. This malady has been the greatest difficulty in raising calves by hand of anything, I ever met with Perhaps you may have noticed it before in your useful paper. If so, it may be acceptable a second time as coming from a breeder, who makes this

statement from actual experiments. It is simple, cheap, and within the reach of every breeder at a trifling expense. I would ask the question whether *lime* thoroughly water slaked, would not be a good substitute for chalk, and answer the purpose equally well?—*N. E. Farmer.*

To prevent Milk from becoming sour.——To prevent milk from turning sour and curdling as it is so apt to do in the heat of summer, the milk-men of Paris add a small quantity of sub carbonate of pot-ash or soda, which saturating the acetic acid as it forms, prevents the coagulation or separations of curds, and some of them practise this with so much success as to gain the reputation of selling milk that *never turns*. Often when coagulation *has* taken place they restore the fluidity by a greater or less addition of one or the other of the fixed alkalies. The acetate which is thus formed has no injurious effects and, besides, milk contains naturally a small quantity of acetate, but not an atom of really a carbonated alkali.—*N. E. Far.*

Tar —It is but little known, but it is nevertheless a fact, (says the Portland Mirror,) that a little tar rubbed on the necks of young lambs or geese, will prevent the depredations of foxes upon them; these animals having an unconquerable aversion to the smell of tar.

Heaves in Horses.—Take one pound and a half of good ginger, for a horse, give two spoonfuls each day—one in the morning, and the other in the evening, mixed with wheat bran. This receipt has been selling at the Eastward for $5, where the efficacy of the above medicine has been proved in the cure of several cases of obstinate heaves.—*Amer. Farmer.*

Thunder fatal to Goslings.—A writer in the American Farmer says, in a late thunder storm the lightning descended in a field, within less than half a mile of my dwelling and killed two labourers, and laid prostrate and injured three more. But the effect in my fowl yard was very remarkable. I had two broods of goslings, one nearly a week old, on the ground, and another, two days, in a basket in a house. At the instant when the thunder fell, which it did with the most astounding force, the woman who had the care of the fowls, happened to be looking upon those in the basket, and saw them, at once, all fall over upon their backs and expire. Those in the yard, half an hour after, were found dead also; a nest of eggs under a goose, then in progress of hatching, were all killed. You may rely on the correctness of this statement. Though goslings are easily raised, and live more than a century, they seem to be endued with nerves of uncommon sensibility, or to have systems peculiarly favourable to electric impressions.

A respectable gentleman in the neighbouring town, informs us that during the cannonading of the battle of Bunker Hill, he was feeding a brood of goslings about 6 miles from Charlestown, and that all the goslings turned on their backs and died. The gentlemen was then a boy, and was much puzzled by the mysterious occurrence.—*Salem Gaz.*

Young Fruit Trees —Sir John Sinclair observes in the Code of Agriculture, "It cannot be too strongly inculcated that to permit young fruit trees to bear fruit too early is to do essential injury to their future fruitfulness and duration." The fruit should, at least on young trees, be thinned by plucking it carefully by hand, till there is no more left than will be sufficient to serve as a sample of the product of the tree, and show whether it would be desirable to engraft it.—*N. E. Farmer.*

Dates.—A friend left in our news room, on Monday, a bunch of young Dates, taken from one of several date trees on Wilmington Island, near this city, cut down by the late severe weather, and which, but for this misfortune, would, no doubt, have successfully matured. This tree when

raised by planting the axil of the leaves, will bear in five or six years; but produced from the seed, fifteen or twenty years are required. In the Northern part of Africa, in Persia, the Levant, &c. it grows over 60 feet high, with a straight trunk crowned by a tuft of long pendant leaves ten or twelve feet long.—*Savannah Georgian.*

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Kill Caterpillars.—It is strange that the owners of orchards should permit caterpillars to overrun their fruit trees, when a little time and attention might rid them of the nuisance. A rag fastened to the end of a long light pole well wet with strong soap suds, and applied to the nest is an approved, cheap and efficient remedy. Care should be taken to attack the insects when they are in theis nests. either morning, evening or in cloudy weather. —*N. E. Farmer.*

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Willis' Grape Vine.—Oxford, Md. May 20th, 1831.—Mr. Smith, Dear Sir, As my grape vine has excited so much curiosity amongst strangers and others, I yesterday called in two of my neighbours to try and count the bunches on it. One limb was up a fruit tree so high, that it could not be counted. It covers a large part of the yard in an espalier form, and has run up four fruit trees You have the certificate of my neighbours enclosed, and may publish it if you please.

I have the honour to be, your most obedient, humble servant,

JOHN WILLIS.

Oxford, May 19th, 1831.—We hereby certify, that we were this day, called on to count the bunches of grapes that are on the vine in John Willis' yard, and we have counted them as well as we could, but have made allowances and thrown in many for good count, and have counted twenty-five thousand, one hundred and ten bunches, one-third or nearly half of them are double bunches and only counted as single bunches. The vine is commencing in its seventh year's growth, as he says, and the stem is only from nine to ten inches in circumference.

CHARLES M. BROOMWELL.

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RICHARD ⋈ GOSSAGE.

mark.

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Posts.—The durability of posts used in making fences is a matter of great importance to farmers, and will continue so as long as the present system of fencing is continued. We are informed that the Shakers at Union Village, have been in the habit of making oak posts as durable as locust, by a very simple and easy process. This is merely to bore a hole in that part of the post which will be just at the surface of the earth, with such a slope as will carry it just below the surface, and fill it with salt. This, it is said, will preserve the timber from decaying for a long time; and from the knowledge we have of the influence of salt, in preserving ship timber when treated in a similar manner, we have no doubt of its being an excellent method.—*American Farmer.*

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Lampas of Horses.—The idea that the enlargement of that part of the roof of a horse's mouth, is a disease, has long been exploded by all veterinary surgeons. All horses are subject to it, between the ages of three and five, more or less; and in many cases, this soft spongy enlargement, descends to a level with the fore teeth, yet upon examining it, there will not be found any marks of tenderness or inflamation indicating disease: and if left to the operations of nature, will disappear, and the horse will have a sound and healthy mouth; not to speak of the danger of bleeding the horse too freely, by opening the *palatine artery;* the manner of performing the operation, is shocking to the feelings of humanity, as well as painful to the animal. It is uncalled for, and must be considered a piece of wanton cruelty.—*Genesee Farmer.*